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A LIGHT FROM THE GREAT CHANCEL WINDOW, TRINITY CATHEDRAL,
CLEVELAND — TOD MEMORIAL — HARDMAN GLASS

TWENTY-EIGHT WEST THIRTIETH STREET.

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A LIGHT FROM THE GREAT CHANCEL WINDOW, TRINITY CATHEDRAL, CLEVELAND—TOD MEMORIAL—HARDMAN GLASS

The
Architectural Record

Vol. XXII JULY, 1907. No. 1.

The New Fifth Avenue

Among the many radical changes which have been brought about during the past six years in New York City, the most radical and the most significant are those which have taken place on Fifth Avenue. That thoroughfare has been completely transformed. It has been transformed economically by an increase in the value of real estate, amounting to 250 per cent. and over. It has been transformed architecturally by the erection of a score of new and imposing buildings and twice as many small ones. It has been transformed in use by the intrusion of a large number of more popular stores. And finally it has been transformed in the human spectacle it presents by a great increase in the number of pedestrians. From being a comparatively quiet avenue, occupied in part by old brown stone residences and in part by a carefully selected group of special stores, it has become a bustling thoroughfare, jammed with carriages and motors, crowded with shoppers and passers-by, and redolent with the fumes of wealth and business.

The transformation of Fifth Avenue between Twenty-sixth and Fiftieth Streets in a very real way symbolizes the transformation which has been taking place in the whole city of New York. Since 1901 New York has become all the more distinguished among American cities for the concentration, which has taken place therein, of wealth and business. During these years rich Americans from every part of the Union have more than ever come to live in New York, and even if they retained their residence elsewhere they have been persuaded by business or pleasure to spend a larger portion of their time in the city. Coincident with this change, the number of very wealthy people among the permanent residents of New York has materially increased, and the extravagance of their tastes has not lagged behind the swelling of their bank accounts. Consequently the market for expensive goods of all kinds has been enormously enlarged, and at the very time of its enlargement, it has been more than ever concentrated on Fifth Avenue. In 1901 many of the shops which appealed to well-to-do customers were situated either on Twenty-third Street or on Broadway south of Twenty-third Street. But during the last six years the majority of these stores have sought new locations on Fifth Avenue from Twenty-sixth Street north, so that contemporaneous with the enlargement of the demand for expensive fabrics came a shifting to Fifth Avenue of the most important tradesmen who supplied the demand. Thus Fifth Avenue has become more and more strongly characterized in proportion as it has become more and more busy. It is, indeed, the only American street devoted for over a mile of its length exclusively to retail trade of a high class which has taken on a specific character. It has none of the air of quiet exclusiveness which characterizes Bond Street in London or the Rue de la Paix in Paris. Indeed it bears the same relation to the Rue de la Paix and Bond Street as the Hotel Ritz or Claridges might bear to the Waldorf-

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Astoria. Compared to its European analogues, it is big, bustling, somewhat barbaric and decidedly miscellaneous. It provides, as has been said of the Waldorf-Astoria, exclusiveness (in the matter of retail trade) for the masses; and the wonder is that the masses can pay the price. One gets the impression on Fifth Avenue that all the world is there, that all the world has more money than it needs, and that all the world rather likes to exhibit its superfluity.

VIEW ON FIFTH AVENUE LOOKING NORTH FROM 34TH ST., AND SHOWING THE KNICKERBOCKER TRUST, ALTMAN, TIFFANY AND GORHAM BUILDINGS.

The effect of this concentration of the expensive retail trade upon real estate values has been so great, and its consequences are, from the architectural point of view, so important, that it must not be overlooked. In 1901 inside lots on Fifth Avenue, measuring 25 x 100 feet, were worth about $125,000. On some blocks they were more, and on other blocks they were less, but their average value per square foot was somewhere between $50 and $60. In 1902 and 1903 the prices of these interior lots jumped up to $200,000 and to $250,000. In 1904, they frequently reached $300,000; and it was confidently predicted by real estate experts that business could not afford any higher rentals. But the end had not come. These inside lots are now worth from $350,000 to $400,000 accord-

ing to location—on the average about $150 a square foot. At the same time the value of corner lots has swollen to not far from $200 a square foot, and in certain instances to more. We believe there is nothing precisely similar to this range of real estate values anywhere else in the world. There is certainly nothing approaching it anywhere in this country. There are, of course, individual corners and particular blocks on Wall Street, on lower Broadway, and even on upper Broadway ,in the vicinity of Greeley Square, the value of which are higher than those on Fifth Avenue. Small lots containing less than 1,000 square feet have sold in New York for as much as $400 a square foot, but on these same streets property three blocks away will be selling for less than $50 a square foot.

THE ALTMAN BUILDING.
Fifth Avenue and 35th Street, New York. Trowbridge & Livingston, Architects.

The remarkable thing about the scale of values on Fifth Avenue is that it extends on both sides of a street for over a mile in length, and that it is maintained almost exclusively by retail trade. In the heart of the financial district of the financial centre of the United States, values that average over $300 a square foot, are far less extraordinary than values of from $150 to $200 a square foot for a strip of real estate on both sides of an avenue one mile and a quarter in length. There is nothing similar to it on Broadway in New York; and we doubt whether there is anything similar to it in Paris or London. It requires the peculiarly American combination of many people with much money—all of them spending with comparative profusion—to enable part of the retail trade of even a metropolitan city to maintain such values.

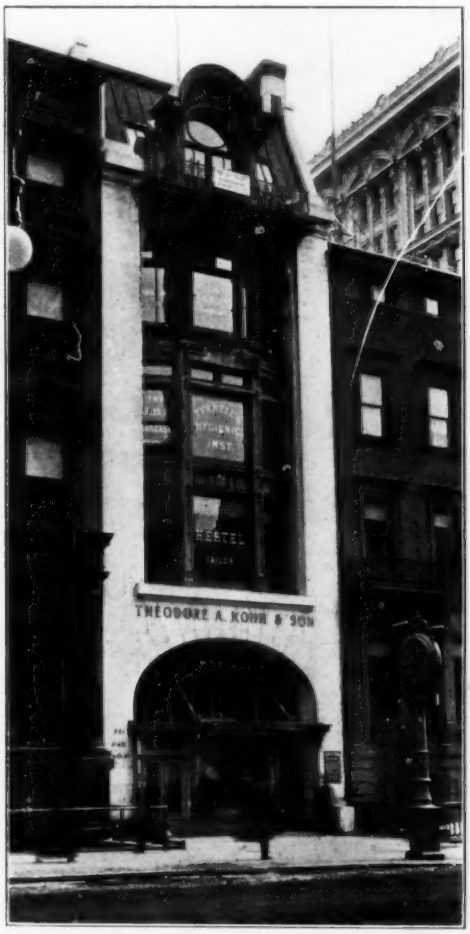
This increase in values has naturally had a most influential effect upon the nature of the business transacted on Fifth Avenue. In 1901 the stores were occupied in large measure by dealers in furniture and house-fabrics, by milliners, by picture-dealers, by jewelers, and by stores which sold a variety of *objets d'art*. The second floors were usually occupied by tailoring and kindred establishments, while thereabove, as like as not, the rooms were let out as lodgings. The increases in value have forced some of the furniture and picture-dealers, who need a large amount of space, to seek locations on the side streets contiguous to Fifth Avenue, and something of the same fate has attended a number of small shops which supply a limited class of objects to a limited number of customers. The small milliner, tailor and curiosity shops have overflowed to the side streets, and their places have been taken by business with a larger patronage. The largest jewelers and silver-smiths, several of the largest piano-manufacturers, the best hat and gentlemen's furnishing stores, some of the best music and linen shops, as well as a large proportion of the picture and furniture dealers, now occupy the stores on the street, and the upper floors are almost exclusively given over to offices. It is noticeable, however, that comparatively few general dry-goods stores have as yet intruded on Fifth Avenue. In fact the only one on the avenue itself is Altman's, but the new McCreery shop on Thirty-fourth Street is for all practical purposes on the avenue. The failure of some of the more expensive general dry-goods shops which still remain south of Twenty-third Street to move into the chosen district is to be explained rather by lack of a way than lack of a will. It would now be practically impossible for any competitor of Altman's to secure a block front or even half a block front in any desirable part of the avenue. Such sites cannot be had at any possible price, because so many of the best corners have already been purchased by business houses with the intention of maintaining at that point the permanent location of their stores. The only other available block front on the avenue is controlled by Mr. Altman himself.

It was necessary to enter into this description of the economic conditions of the avenue, because they explain the architectural changes which have been taking place. The appearance of the thoroughfare has been as utterly transformed as has its economic standing. In 1901 Fifth Avenue still strongly suggested the time when it was lined with rows of dull, monotonous, high-stoop brownstone houses. It had, indeed, for fifteen years been gradually altering into a business thoroughfare. The fronts of many of the old dwellings had been knocked out and store-windows installed. In a few cases, such as those of the old Astor houses, at Thirty-fourth Street, the dwellings had been torn down to make room for commercial buildings, but at that time more than nine-tenths of the corners on the avenue had suffered no violent change. The old Stewart house, although doomed, was still standing, and the two easterly corners of Thirty-fourth street, while devoted to business purposes, had merely been slightly altered to these ends. In spite of the Waldorf-Astoria, the whole atmosphere of this most important corner on the avenue was still peaceable, and recognizable to a New Yorker of the

seventies. There was nothing about it to foreshadow the tall commercial buildings and the big crowds of to-day.

The architectural changes have proceeded from a number of different sources, and are characterized severely by their origin. Thus in many cases the owners have merely knocked out the front of the buildings, perhaps taken down the stoop, and put in a couple of store-windows. It is this practice which has served most to prevent the appearance of the new Fifth Avenue from becoming generally interesting and effective, because these old buildings are only made more unsightly by their mutilation. On the other hand in certain instances the whole front has been ripped out, and only the old floor levels retained. Then a new front has been built, better adapted to the new uses of the building and more expressive thereof. These buildings, as we shall see, are often the most interesting on the avenue, and they are the only ones which embody a comparatively new and valuable architectural type. Finally many corners have been purchased by speculative builders, who have erected twelve-story buildings thereon of the usual type of commercial loft buildings.

THE GRANDE MAISON DE BLANC.
308 Fifth Avenue, New York.



BUILDING OF THEO. A. KOHN & SON.
321 Fifth Avenue, New York.

The enormous prices which these corners bring are necessitating an increasing number of these operations, but it is very much to be hoped that something will happen to arrest their increase. So far as their influence prevails, they rob the architectural appearance of Fifth Avenue of all character and interest and make it merely the duplicate of the old wholesale districts further south. Finally, in about ten or twelve instances, large plots, including corners, have been bought by the owners of retail stores or banks, which require a large amount of space. In these cases the character of the business was such that it demanded an architectural setting of more than usual dignity. In these cases handsome buildings, designed by architects in the best standing, have been erected, and these buildings, while they are not in any sense typical, afford the most interesting examples in the country of what may be called the "palatial" store.

THE BRUNSWICK BUILDING.

Fifth Avenue and 26th Street, New York. Francis H. Kimball, H. E. Donnell, } Associated Architects.

The first of these classes of buildings —viz., the mutilated brown-stone fronts —has, of course, no architectural interest, except as warnings. These old brown-stone buildings, which in their original state created an impression of dull but opulent respectability, have been converted by their mutiliation and by their newer neighbors into a condition of looking both cheap and rowdy, and fortunately they are by way of disappearing. They have usually remained in the hands of their original owners, who are holding them in the expectation of securing still better prices, and who in the mean time rent them for business purposes under comparatively short leases. These houses are gradually being picked off, either by speculative builders, or by business firms, seeking a

TIFFANY & CO.'S BUILDING.
Fifth Avenue and 37th Street, New York. McKim, Mead & White, Architects.

permanent location; and in this case a newer if not better building is usually substituted in their place.

Often this newer building merely amounts to a new façade, built as a screen in front of the old floor levels, and the façades erected under these circumstances have approached, as we have said, the dignity of a type. The characteristics of this type may be inferred by two examples shown in our illustrations—viz., that of the shops of Theodore A. Kohn & Son, at 321 Fifth Avenue, and the Grande Maison de Blanc, at 308 Fifth Avenue. The object of a business front on an avenue of this kind is,

THE BUILDING OF THE GORHAM MANUFACTURING COMPANY.
Fifth Avenue and 36th Street, New York. McKim, Mead & White, Architects.

of course, to afford a large amount of light, so that the floor space in the interior of the building, which is denied chance of displaying their names and even their wares to the crowds on the street below. The front, consequently,

LOOKING UP FIFTH AVENUE AT 43D STREET.

the advantage of side windows, will obtain as much illumination as possible. Furthermore, the large windows afford the occupants of these floors a better is designed simply as a frame for an array of window glass extending through three stories, and as such it is cheap to build, and strictly utilitarian in purpose,

while at the same time it may well be not unattractive in design. Perhaps the most interesting front of this class on the avenue is that at No. 321. In this case the marble frame work is strengthened in appearance by a considerable depth of wall, and is simplified by the absence above the second floor of any

THE NIGHT AND DAY BANK.
Fifth Avenue and 44th Street, New York.
Henry Ives Cobb, Architect.

BELL BUILDING.
Fifth Avenue and 32d Street, New York.
Maynicke & Franke, Architects.
Snelling & Potter, Consulting Architects.

divisions, except those made by the metallic balcony at the level of the fourth floor. This treatment has perhaps the disadvantage of trying to be in appearance something more than it really is; but the emphatic effect which the architect has obtained is refreshing, and the building has as well an air of smartness

which is well adapted to the needs of a Fifth Avenue jeweler. Compared to it the façade of the Grande Maison de Blanc, while by no means bad, looks a little feeble and a little fussy, while it puts completely to shame the cheap-plaster monstrosity occupied by the International Sleeping Car Co. This last building is, by the way, the most disreputable looking building on the avenue from the architectural point of view. It is an adaptation to Fifth Avenue of the methods of construction which obtain at World's fairs. Fortunately, however, it is one of the few reconstructed buildings on the avenue which

is not a credit to its type; and the length of the thoroughfare would possess on the whole a much better, as well as a more consistent, appearance than it does in case it were lined exclusively with structures like the Kohn Building and the Grande Maison de Blanc.

The illustrations show also two examples of the commercial loft buildings which have been, from the architectural point of view, the most unfortunate result of the increase in real estate values on the avenue. The first of these, the Brunswick Building, occupying the block front on the east side of the avenue between Twenty-sixth and Twenty-seventh Streets, is indeed planned to be used by wholesale houses as lofts, and it is, properly speaking, an extension of the influence of the wholesale part of Fifth Avenue south of Twenty-third Street to the other side of Madison Square. But whatever its economic significance it makes a sorry contribution to the better appearance of Fifth Avenue. It is cheap in appearance, and both commonplace and frivolous in design; and the worst of it is that an infinitely better looking building could be erected on the site without the expenditure of an additional dollar. The structure occupies one of the most conspicuous and finest sites in New York. There is no chance of its being superseded for fifty years; and during all that time it will stand as a monument of architectural vulgarity and turpitude, which has not the slightest justification in the underlying economic conditions. The building on the northwest corner of Thirty-second Street and Fifth Avenue is better, chiefly because it is less conspicuous. Being seen only from the other side of streets which are not very wide, its tiresome architectural detail does not count except from the upper floors of neighboring structures, while the use of cream-colored brick for the upper stories also tends to make the feeble incidents of the design disappear in its mass. It is a fair sample of the from eleven to fifteen-story commercial building with which the unholy enterprise of a few speculative builders are covering the newer business districts of New York. There are several other examples of them in the Fifth Avenue retail district, and they all possess architecturally the same characteristics. They are, indeed, the modern commercial analogues of the old brown-stone houses. They seek a certain kind of respectability, and obtain it by being hopelessly dull, and at times heavily ornamental. One would almost prefer the comparative excitement of a frank or foolish aberration to this monotonous repetition of a type which several years ago should have been literally bored to death by its own reiterated intrusion.

The buildings erected by rich retail firms for their own occupancy constitute the last and individually the most interesting examples of commercial architecture on the avenue. Indeed they constitute the new Fifth Avenue. It is these buildings which linger in the minds of visitors to New York, and constitute a sort of selected and glorified vision of the thoroughfare, as the most remarkable and interesting business street in this country. There is some truth in these lingering impressions; but it might be wished that there were more. The buildings of which we speak possess, indeed, an unusual distinction among American commercial buildings. There is nothing like them elsewhere in this country, and their parallels would be very rare in the largest European cities. They compare, indeed, with corresponding European buildings very much as the best modern American hotels and residences compare with the best modern European hotels and residences. They are sumptuous, showy and somewhat overwrought, but a genuine desire for architectural excellence has entered into their design and dignifies their pretensions.

The buildings belonging to this class which should not be overlooked, all of them stand in the ten blocks between Thirty-fourth and Forty-fourth Streets. They include the offices of the Knickerbocker Trust Co., the Altman store, the Gorham and Tiffany stores, Sherry's and the Night and Day Bank. Sherry's was erected over ten years ago; but the other five buildings have all been erected since 1903. Of this five the least interesting

is the Night and Day Bank on the southeast corner of Forty-fourth Street and Fifth Avenue. Compared to the commercial structures at Twenty-sixth or Thirty-second Street and Fifth Avenue this building is indeed a monument of architectural discretion and good taste. It is an excellent example of the severely simplified, frankly monotonous, and very economical type of business building, of which the office of D. H. Burnham has afforded so many examples; but the architect, Mr. Henry Ives Cobb, might, in this instance, without destroying its salutary utilitarian character, have added a certain amount of emphasis and distinction to the design. Its simplicity is somewhat sterile for a conspicuous building on a conspicuous corner of the most conspicuous avenue in the United States. As to the Altman Building ten blocks further south, whatever may be thought of the design, it certainly produces the effect and serves the purpose evidently desired by its owner. Abundance of window space is provided without any destruction of the strength of the piers; and the building has all the appearance of a fashionable store without any suggestion of mere ostentation. The great distinction of the building comes, however, from the stone of which it is built. This stone was imported from Paris, and is the well-known soft sandstone, to which so many Americans have been gratefully accustomed in that city. The mixture of softness and warmth in the color is inexpressibly refreshing after one's eyes have been tired by the ghastly cream-colored brick, so popular in New York, or even by the harshness of many native American stones; and it is very much to be hoped that the example set in the Altman Building by Messrs. Trowbridge and Livingston will be followed in many other instances.

The other four buildings, belonging to this class, which we have mentioned, were designed by Messrs. McKim, Mead & White. All of them have frequently been discussed in this and other architectural publications; and it is not necessary to revive these discussions in the present connection. One remark must, however, be made; and that is, out of these four and, indeed, out of all the business buildings erected by McKim, Mead & White in New York, the one which wears best is emphatically the Gorham Building. The façade of this building is a surprise and a joy whenever it looms up during the course of a walk down Fifth Avenue, and the more closely it is studied the more it shows the result of the careful elaboration of an initial idea, which was both happy and appropriate. It is the front-

THE BUILDING OF THE INTERNATIONAL SLEEPING CAR CO.
Fifth Avenue and 30th Street, New York.

age on Thirty-sixth Street rather than on Fifth Avenue which justifies the design of the façade, and it should consequently be remarked chiefly during a walk on the east side of the avenue, directed towards Thirty-fourth Street. Compared to the Gorham Building the Tiffany Building is by way of being frivolous and the Knickerbocker Trust Co. almost a mistake.

If the design of the building of the Knickerbocker Trust Co. is a mistake, the mistake is due to the fact that the

architect has sought to achieve the impossible. The object was to erect a low and effective building on a corner, which was sure to be surrounded by structures three times its height, and the scale of the colonnade was the outcome of the necessary emphasis which had to characterize the design of a four-story building under such surroundings. But no matter how colossal the scale of such a design, it cannot look well in immediate relation to two high blank walls. The building of the Knickerbocker Trust Co. is not rendered insignificant by its neighbors, the Aeolian and the Century, but the architectural effect of the whole group is so unhappy that one would prefer to see on the corner a much less distinguished building, whose cornice line was as high as that of its neighbors. The Trust Company has always threatened to turn the existing building into a fourteen-story structure, and regrettable as would be the alteration of the existing building, it would have many compensations. The intersection of Thirty-fourth Street and Fifth Avenue would certainly look better on the whole with a comparatively tall mass on every corner than it does now with two corners occupied by tall buildings. The Knoedler Building will come down in a year or two and the Altman store extended over the corner, and perhaps the President of the Knickerbocker Trust Co. will reach the conclusion that the architectural advantage of maintaining a low structure among such lofty neighbors is scarcely worth what it costs.

In any case, the architecturally incongruous appearance of the intersection of Fifth Avenue and Thirty-fourth Street is typical of the appearance of the whole thoroughfare. A better example could not be asked of the imposibility under the conditions of American urban building of obtaining any consistent excellence of effect in the architecture of a street. Here is an avenue which, for a mile and a quarter, is subject to the same commercial conditions and is used for practically the same purposes. The value of the real estate throughout this same distance has increased almost threefold in six years, and preserves, at the present time, an unusual conformity along the whole area. If the underlying business conditions could ever give a desirable unity of effect to a street they should have done so in this instance; but, of course, they have done nothing of the kind. The new Fifth Avenue is entirely without good street architecture, properly so-called. At no point on the avenue can one obtain a pleasant or a consistent general impression. There are some very beautiful individual buildings scattered along the avenue, and as we have seen, there has been developed a type of commercial building which is both strictly utilitarian and architecturally valid. But the individually effective buildings are so rare that one usually has to go out of one's way in order to find them, and the good type of reconstructed house-fronts is lost in a mass of brown-stone relics and twelve-story architectural nonentities. Moreover, this condition will hereafter, in all probability, grow worse rather than better. Ten years from now Fifth Avenue, as a whole, will be dominated by loft-buildings from eleven to fifteen stories in height, constructed mostly of cream-colored brick and in effect utterly lugubrious. But even the domination of the loft-building will not be sufficiently unqualified to give the street architecture any consistency. There will be so many reconstructed or un-reconstructed house-fronts scattered in between that the sky-line will be jagged and the effect uninteresting in its incoherence.

The truth is that the "sky-scraper" has its worst possible effect upon the architectural appearance of a long straight vista, such as that made by Fifth Avenue. When erected on an irregular plot, which is seen from many different angles, such as are the Flatiron and the Times Buildings, their effects are frequently picturesque and interesting. On the other hand, when they cover a whole district, as they do in the immediate vicinity of the New York Stock Exchange, they are also very effective in their mass, either as seen either from the street or from the Hudson River or from the Brooklyn Bridge. But when seen, as they are on Fifth Avenue, at oc-

1.—THE MORMON TEMPLE, SALT LAKE CITY.

casional intervals along a straight line, they are neither picturesque in outline nor massive and stupendous in effect. A person who is walking up and down the avenue merely observes the sky-line cut by an ugly slice of building, whose most conspicuous side is the bank sidewall of brick, which, from the point of view of its architectural design, was supposedly to be concealed. Buildings facing on a long avenue and seen down a straight line must, in order to look well, have a uniform cornice-line, and if there was ever in this country an instance in which the establishment by law of a restriction on the height of buildings was justified, that instance is Fifth Avenue in New York City. Fifth Avenue is, and is destined still more to be the most conspicuous, the most notorious street in any American city. It is the street whose business activity typifies precisely the manner in which New York is the American metropolis. The city government has every reason to pass regulations which would help this showy avenue to make an extremely good show; and the property-owners would have no right to complain about such a limitation of their privileges, because of the enormous benefit which they have reaped from the recent increase in values. The growth of New York has put so much money in their pockets that they could well afford to do something for the city. But the idea that a limitation on the height of buildings along Fifth Avenue was peculiarly appropriate has not even been suggested; and the city has so little will to impose its own needs upon the property-owners that it fails to take a necessary step, which it has every legal right and every business reason for taking. It fails to revoke the old stoop-licenses and stop the congestion of carriage traffic by widening the carriageway at the expense of the sidewalks. The new Fifth Avenue must remain a market-place for the rich without any appropriate architectural setting. Its architectural interest can only be occasional and incidental, and it even looks as if in the course of time the interesting architectural incidents would gradually become proportionately less numerous and conspicuous. *A. C. David.*

Building in Salt Lake City

There is nothing quite like the site of the City of the Saints, even in the wonderful country "Between the Mountains." No wonder the early Mormon pioneers found it Canaan, and the memories of their early scriptural reading before they took off to Joe Smith's "Revelation" of Spaulding's clumsy and elaborate Biblical parody came back to them. It is a land flowing with milk and honey, sure enough, the Utah valley. And the approach is calculated to enhance every charm it possesses. Imagine a six weeks' tramp in a "prairie schooner" over those desolate and arid lands which you now glide over in a day and in a Pullman, the dreariness and monotony of it all, to say nothing of the perils that confronted the pioneers, the peril of hunger, the peril of drought, the peril of hostile Indians. The trail from the Missouri to the mountains must have been whitened by bones long since become indistinguishable from those of the buffaloes, excepting to a comparative anatomist. And then the huge inhospitable mountains that form the gateway to the Promised Land, between whose awful forms the trail goes, the trail and now the rail, in what the descendants of the Dutch settlers of the Catskills spell a "clove," though the descendants of the Dutch settlers of Cape Colony still spell it a "Kloof." After all this, when you come upon the Happy Valley, no language can exaggerate its attractiveness. And, from the landscape artist's point of view, the site of Salt Lake City is the very pick of the fair and fertile valley. The lake itself, necessarily recalling the Dead Sea to Bible readers, makes no figure in the landscape of desert, being

2.—THE EAGLE GATE, ERECTED BY BRIGHAM YOUNG.

3.—THE DESERET NATIONAL BANK.
R. M. Upjohn, Architect.

indeed out of sight from the streets of the City of the Saints. The site of the city is an orchestra or Greek theatre, backed and framed by "the circle of the hills," with its floor gently sloping westward toward the Great Lake, and the solemn mountains forming a background whichever way you look except westward. I would not undertake to give dimensions, this description having the vagueness of a retrospect. But, generally, one may say that the slope from Fort Douglas, backed up against the eastern hills, to the railroad tracks westward of the town, is ample and no more than ample to "accommodate" a great city.

4.—THE DOOLEY BUILDING.
Louis H. Sullivan, Architect.

One could expect nothing of the architectural beginnings of a town founded as Salt Lake City was founded, by immigrants poor and ignorant and of various as well as vague architectural traditions. But the fact that the migration was organized and theocratic made a difference. Joe Smith had projected and partly built a temple at Nauvoo on the Mississippi, before the expulsion of his sect, which was solid and pretentious, and naturally it had no other interest. And, while the houses of the Mormon pioneers of Salt Lake were the cheapest and hastiest shelters that could be provided, early efforts were made to give to the communal buildings of the theocracy as much impressiveness as possible. This was all of material, not at all of design. It was rather a mistake to pretend, as I believe was if not is pretended, that the design of the temple was "revealed." Because unfortunately it was the same kind of design that would have been revealed at that time, that time being near the nadir of American architecture, to any untutored

country carpenter or stonemason in the United States, who had never seen a respectable piece of architecture. To any tutored eye, the pretence of revelation is a "give away." It had been better to give the designing to some eminent Gentile practitioner, even if he had executed it in a spirit of hilarity. As to the actual edifice, hear Rudyard Kipling. His account was written about 1889:

Some day the Temple will be finished. It was begun only thirty years ago, and has cost up to date rather more than three million dollars. The first thing to be seen was, of course, the Temple, the outward exponent of a creed. Armed with a copy of the Book of Mormon, for better comprehension, I went to form rash opinions. The walls are ten feet thick; the edifice will be about a hundred feet high, and its towers will be nearly two hundred. And that is all there is of it, unless you choose to inspect more closely, always reading the Book of Mormon as you walk. Then the wondrous puerility of what I suppose we must call the design becomes apparent. These men directly inspired from on high, heaped stone on stone and pillar on pillar, without achieving either dignity, relief or interest. There is, over the main door, some pitiful scratching stone representing the all-seeing Eye, the Masonic grip, the sun, moon and stars, and, perhaps, other skittles. The flatness and meanness of the thing almost makes you weep when you look at the magnificent granite in blocks strewn abroad, and think of the art that three million dollars might have called in to the aid of the church. It is as though a child had said: "Let us draw a great big fine house—finer than any house that ever was," and in that desire had laboriously smudged along with a ruler and pencil, piling meaningless straight lines on compass drawn curves, with his tongue following every movement of the inept hand. Then sat I down on a wheelbarrow and read the Book of Mormon, and behold the spirit of the book was the spirit of the stone before me.

5.—DESERET NEWS BUILDING, SHOWING PIONEER MONUMENT.
R. J. Kletting, Architect.

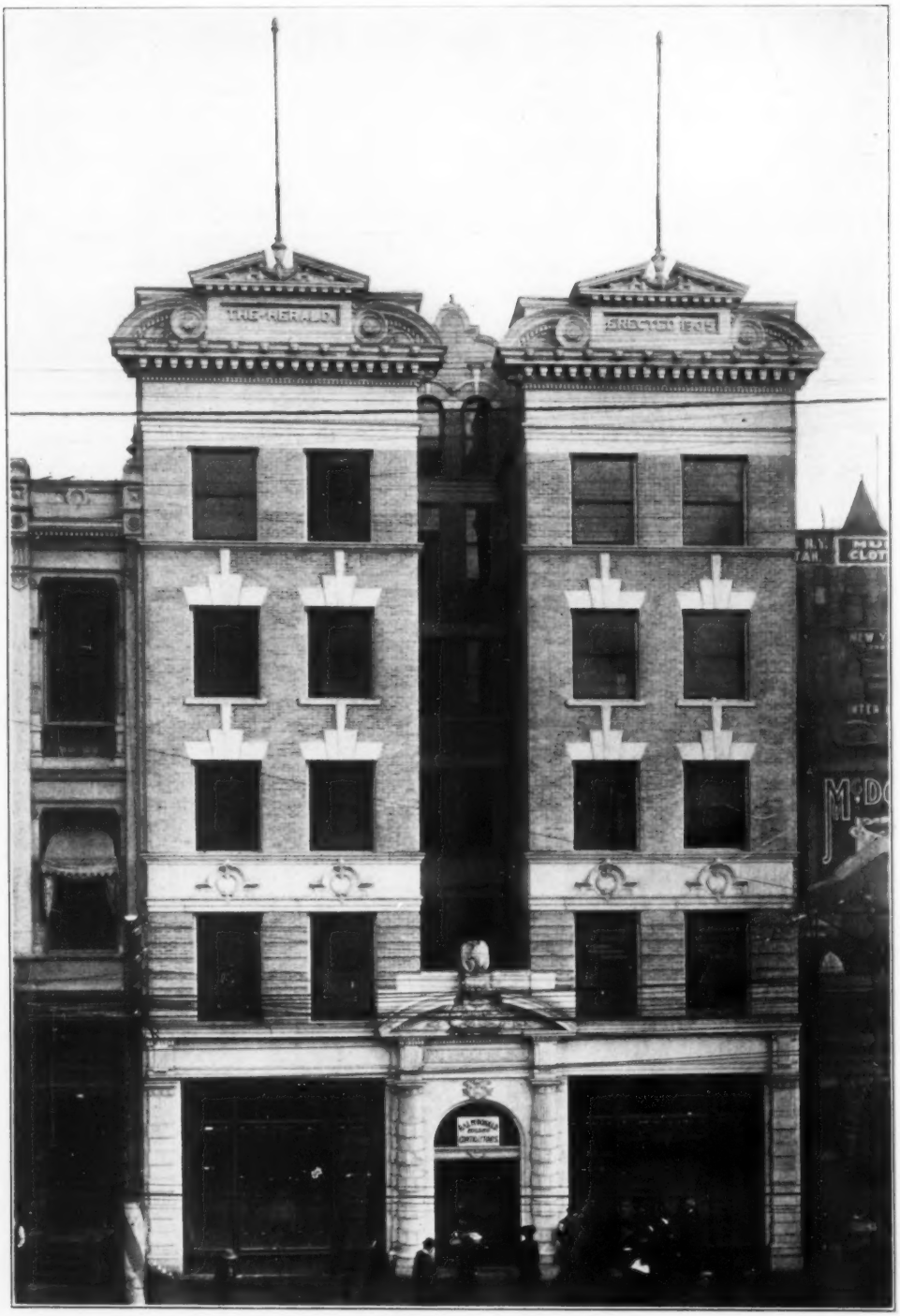
In truth, there have gone as few brains to the Temple as to any edifice extant. Even the rude religious beginnings of a savage tribe celebrating its gods give more "evidences of design," show more definite building purpose

than this preposterous erection, so much the more preposterous on account of the advanced stage of mechanical art that goes with the backwardness of its architecture, not backwardness, but mere emptiness.

The other architectural occupants of "Temple Square" are not so bad. For one thing, they could not be worse. For another thing, they do not show that waste which almost made Mr. Kipling weep, in making mere rubbish and nonsense of huge blocks of ever-during granite. For a third, they have practical ends to serve, and were planned and built accordingly. No edifice which is the most straightforward adaptation its builder could conceive of practical means to practical ends can be vulgar altogether. Now, the Temple doubtless serves practical ends, though what they are no Gentile is permitted to know and not all Mormons. But plainly they are not the basis of the "design," of the absurd child's play of the architecture. The huge, massive, everlasting ridiculous thing was conceived, saving the mark, as a "monument," its practical uses being not only incidents, but afterthoughts.

6.—McCORNICK BUILDING.
Mendelssohn & Fisher, Architects.

There is said to be a big hall or auditorium concealed somewhere about the premises, but the secret of its whereabouts is well kept. Nothing about the exterior tends to give it away. Tiers of single cells, an "office building," is what one would surmise from the outside. Now the Tabernacle is quite the opposite in the method of its construction. One need not go into it—I did not—to be assured that it is simply a huge audience room planned and built straightforwardly for the purpose of enabling as many

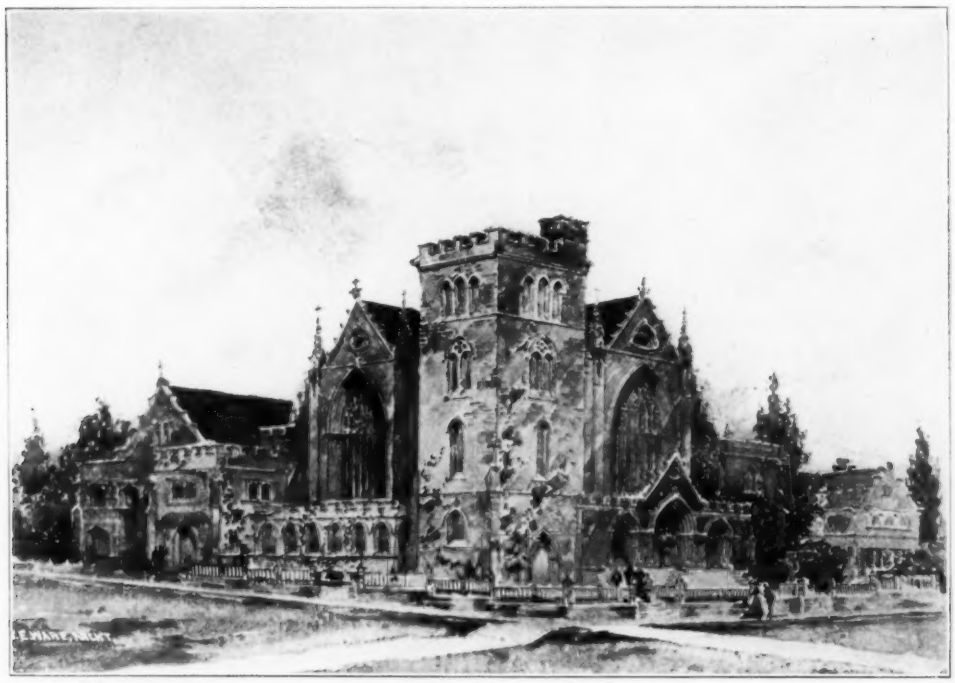


7.—THE HERALD BUILDING.

J. C. Craig, Architect.

persons as possible to hear and see. Here is a purpose to begin with, and for this relief much thanks. The great turtle back of the roof proclaims the purpose from afar. One may say that architecturally it is neither here nor there and not worth talking about. In sooth it is not. But how attractive the mere absence of pretension, the abdication of architecture, if you will, after the violent negation of architecture in its big neighbor. It is in the same class with the big Auditorium at Ocean Grove, and with many another like structure, which nobody would think of criticising architecturally, and about which the only question is whether they do fulfil their practical purposes. I am told that the Tabernacle fulfils its particular purpose very well. It is without offence.

The third of the edifices in the enclosure is not so good as the second and could not be as bad as the first. The Assembly Hall, I think the Mormons call it, though it looks more like an administrative building. It was built, one imagines, in the late sixties or the early seventies, when the fashion was for the Victorian Gothic of which it is a deeply misunderstood example, and is the kind of thing with which the untutored "architect" was in those days defiling the face of Nature withal from the Atlantic to the Mississippi. Outside the sacred enclosure are the other two Mormon monuments, the "Eagle Gate," which gives access (does it not?) to the populous village which formerly held in humble one-story cottages the family, literal "propaganda" of the much propagating prophet. It is not much worth looking at or talking about. Here also one recalls various monuments in older settlements, entrances to cemeteries and such like, which are no better and not very widely different. And then there is the considerably later "Monument to Brigham Young and the Pioneers," who surely deserved a monument for their courage in sallying out across the unknown and



8.—PRESBYTERIAN CHURCH.
Ware & Treganza, Architects.

desolate plains infested with hostile savages, whatever they went out into the wilderness to see or found. And the monument itself shows a considerable advance upon its predecessors, being, in point of fact, both as to its architecture and its sculpture, the kind of monument which, if dedicated to the "Soldiers and Sailors" instead of to the Pioneers, and planted in a town eastward of the Mississippi, instead of one a good thousand miles to the westward of it, would at any time during the eighth or ninth decades of the nineteenth century have been pointed to with pride by the local cicerone, and recognized by his pilgrim client as a negotiable expression of the prevailing fashion.

These are the only monuments of the "style officiel" of Mormondom. It will be seen that they are of the average quality of the monuments of what may fairly be called the official American style of their respective periods outside of Mormondom. If the Temple seems below the average, that is mainly because of the great cost and monumental material that have been so pitiably wasted in carrying out a conception which is no worse than the contemporary conception of the average American country carpenter. On the other hand the straightforwardness and simplicity of the Tabernacle raise it distinctly above the common standard throughout the United States at large, of edifices of its class, and suggest that some educated architect was in the planning of it imposing upon himself a great renunciation. The other things have their counterparts elsewhere. It were to hold the Mormons to too strict an accountability to blame them for not transcending the common standard, which is no standard.

9.—FIRST CHURCH OF CHRIST SCIENTIST.
Ware & Treganza, Architects.

In a way we have some reason for the expectation. You would not expect much, in the way of fine art, from a people reared as you know the mass of the original or pioneer Mormons to have been, still less of the people whose literary standard is Spaulding's not very skilful hoax in the way of a parody of the Bible, and whose architectural standard may be supposed to be represented by that awful and ridiculous "Temple." But they are an artistic people, all the same. Distinctly more so, one has the right to say, than their Gentile neighbors, sprung from the same plane of culture. There are more and better Mormon sculptors, painters, musicians, than there are proportionately in the surrounding Gentile tribes. With this direction toward art, for which it is not my business to account, and with the resources of the hierarchy and the solidarity of the church, it would have looked reasonable that they should have produced some beginning of a distinctive tendency in the eminently communal and social art of architecture. But, unless the Tabernacle, about the designing of which I know nothing, be such a beginning, no such beginning is to be found. The simple and straightforward adaptation of means to ends in that structure, the unobstructed spaces, the successful attention to acoustics, the number and amplitude of the exits and the entrances, the effective arrangement of the supports, and in a word the entire abnegation of the conventional notion of "architecture" indicate some tincture of the real thing. One ought, however, to credit the Mormon instigators with good building, even though the builders were not themselves Mormons. As students know, toward the end of the sixties not only

10.—PACKARD LIBRARY. Heins & LaFarge, Architects.

were the commercial streets of all our cities defiled by buildings of cast iron in absurd imitation of masonry, but sundry thoughtful designers were misled into trying to treat cast iron as a building material, ignoring that exposed cast iron was not available for more monumental uses than the framework of a greenhouse. A monumental greenhouse is the best you can say for Sir Joseph Paxton's achievement, or for the advance upon it shown by the designers of the New York Crystal Palace a year or two later, long since destroyed. Nevertheless, really competent designers were working at the iron front problem from 1865 to 1875 and the Mormon hierarchs had the luck and the judgment to fall in with one of them, and to incite him to do his best. What is now the Deseret National Bank was the scene of the undertaking, and the late Richard M. Upjohn was the architect the hierarchs were beneficently inspired to employ. The Mormon Bank was at least a semi-official building. The business aspect of Mormonism has never for a moment been suffered to lapse into invisibility. The hierarchy is entitled to its share of the credit for what all students will agree was one of the most interesting solutions of the problem of the iron front. To look at is to see that the designer must have trusted to a great degree for its effect upon the application of color, as all the competent designers in that kind did. You will observe that paint might have done much, by emphasizing the dependent tracery, to soften even while emphasizing the stark uprights and transoms of the essential construction. One would like to see it, even now, treated by a painter who knows what he is about, or painted under the

11.— RESIDENCE.

Ware & Treganza, Architects.

direction of some one who does. Very likely that result was attained at first. But of course the front has in the interval been treated to many "coats" of many colors, and at present it is of a uniform dingy, gamboge, which does not give the design half a chance. And yet, for its date and for its material, the photograph shows it to have been an apparently promising and a distinctly exemplary instance of the then "new departure."

12.— RESIDENCE.
Fred. Hale and Thos. Green, Associate Architects.

But these things, like the one-story cottages and the one-story stores, are relics, and there is a sharp line of cleavage between them and the earliest of what may be called the modern buildings. The Utah notion of antiquity is as comic to the Easterner as the Easterner's notion to the European. At one of the stations between Ogden and Salt Lake there is a country store which proudly brandishes on its front the sign, "Founded 1888," proclaiming a duration which goes back to "the twilight of fable." The earliest of the modern office buildings in Salt Lake, I suppose, is the Dooley, which may date back nearly 20 years, and which has an interest of its own as being the work of Mr. Louis H. Sullivan, and quite recognizable to those who know his other Southwestern work, the station of the Illinois Central at New Orleans, the opera house at Pueblo, Col. Like those, this recalls the Spanish mode, if only by the unbrageous projection of the roofs, which was one of the chief features in that questionable, or at least much questioned, edifice, the Transportation Building at the Columbian Fair. It is also shared by a hotel in Chicago, the "Victoria." It is required, of course, for the protection of walls of adobe or of "staff," and loses some of its signifi-

cance when superposed upon and overshadowing walls of actual masonry, as in the present instance. For the rest this is a sober and discreet performance, very exemplary in a place where monotony is by no means the besetting sin of the local designer, without a single ornament, unless the slight moulding of the jambs of the principal piers be accounted such. It asserts itself as unmistakably the work of an architectural artist, by the fenestration, the disposition in tiers of stories, the projection of the piers, sufficient though slight, the punctuation given to the crowning member by the triplets over the large arches and the projection of the roof beams. The author would hardly do it now, I suppose, with the new lights he has since seen, and the courage to which they have emboldened him. But Salt Lake has reason to be grateful that he did it then.

One is always glad in this Western country, where the trail of the Spaniard is over it all, to come upon traces of the Spaniard's architecture. Utah is by no means sub-tropical, nor is protection from the heat and glare a primary requirement in building. The umbrageous projection of the roof of the Dooley

13—RESIDENCE.

Ware & Treganza, Architects.

building is, however, its only recall of the building of the pioneers. But the style, the style of the Missions, is carried out much further and much more literally, in the old State Fair Building at Salt Lake City, an appropriate design for a building of which the architecture proclaims the occasional and festal purpose, and in which the quaint style is seen at its best. All its badges are here, the umbrageous roof, the low belfries

superposed upon their stark towers and framing curvilinear gables, the terminal pavilions with their plain walls and their spreading roofs. All are admirably adapted and put together, and the slight decorative detail, slight in quantity, is as well placed and scaled as designed. Nobody could mistake the work as that of any but a trained and a sensitive designer. Quite apart from the historical ing is exemplary in quite the same way as the Dooley Building.

The commercial lions of Salt Lake, the modern office buildings, show that the lesson of quietude has not been thrown away. The building of the Deseret News, the Mormon newspaper organ, and the McCornick, are these lions, the latter, I suppose, the latest and certainly the loudest. I suppose the latest,

14.—RESIDENCE.

Ware & Treganza, Architects.

or the climatic appropriateness of the style as a point of departure, it has two qualities that are good always and good everywhere, and that may well commend it to American designers. Breadth and simplicity are these excellent qualities. And breadth and simplicity are two of the qualities of which our architecture stands most conspicuously in need, two of its main defects being fussiness and "thinginess." So the State Fair Build- since it is a story higher ("seven in all, she said"), than the modest six of the Dooley and the Deseret. All three are large drafts upon the future, in a town of which, as their neighbors show, two stories is the normal limit for present commercial purposes. But there is nothing offensive about either, and extravagant expectation in our West is very apt to lose its extravagance by being caught up with and ceasing to be extravagant

within the space occupied in the erection of a skyscraper. It would even be unjust to damn them with the faint and negative praise of inoffensiveness. The Deseret News building is a straightforward and sober-sided performance which John Root might have acknowledged without shame, though he would have tried to break out somewhere into a mild efflorescence. The McCornick, in spite anywhere. When Salt Lake grows up to them, and there comes an effective demand for the reconstruction of the entire business quarter on the like lines, there will be little or nothing to unlearn of what these three edifices have inculcated. The later Herald Building is not so exemplary. It is exemplary, indeed, in confining itself to a modest altitude of five stories, which is all that seems

15.—RESIDENCE.

S. C. Dallas, Architect.

of its greater ambitiousness, indicated by the quoining, by the attempt, hard to justify in a steel frame building, of a triple division of each front, and by the entirely irrelevant and dispensable "order" at the base of the centre of the narrower, where the arch which makes the centre of the wider would be so much more to the purpose, the McCornick would be a respectable and practical specimen of elevator architecture warranted by the present or the visibly future requirements of the town, and in the general sobriety of the detail. But one does not quite see the use, in the actual conditions of the place, of a court reduced to a "slot" which by no means provides a satisfactory illumination for premises otherwise unlighted. And certainly one does not see the use of the exuberant and riotous display in which the building breaks out at the top, which

irresistibly suggests the cheap pretense of sheet metal, and forms so unpleasant an exception to the rule of sobriety observed in the detail of the structure.

Gentile churches are not what the tourist expects to see much of in Salt Lake City. But Salt Lake has them of the leading denominations, though the church buildings are quite unmemorable with one memorable exception. This is the Presbyterian Church, finished in 1905, which is a great refreshment for the tourist. It suffers, when one looks at it as a specific expression of Presbyterianism, as almost all Presbyterian churches do, from the lack of an architectural tradition. But how can the lineal descendant of the Puritanical iconoclasm of the seventeenth century, which is traced over England by its ravages, but never by its works, have an architectural tradition? It came not to build up but to destroy. Perhaps its true type is the American "meeting house" of New England, which was a degeneration from the works of Wren and his successors. Architects there are who, from that unpromising point of departure, have made unmistakably Presbyterian churches which are also worth looking at. But the easier and more tempting way is frankly to disregard your Presbyterianism as inexpressible, and revert to the Anglican type. This the designer of the present edifice has done with such completeness that the uninformed beholder would take his work for a Protestant Episcopal Church. But also he has done it with a skill and success and to a picturesque effect, which must reconcile the cultivated parishioner, and which certainly produces

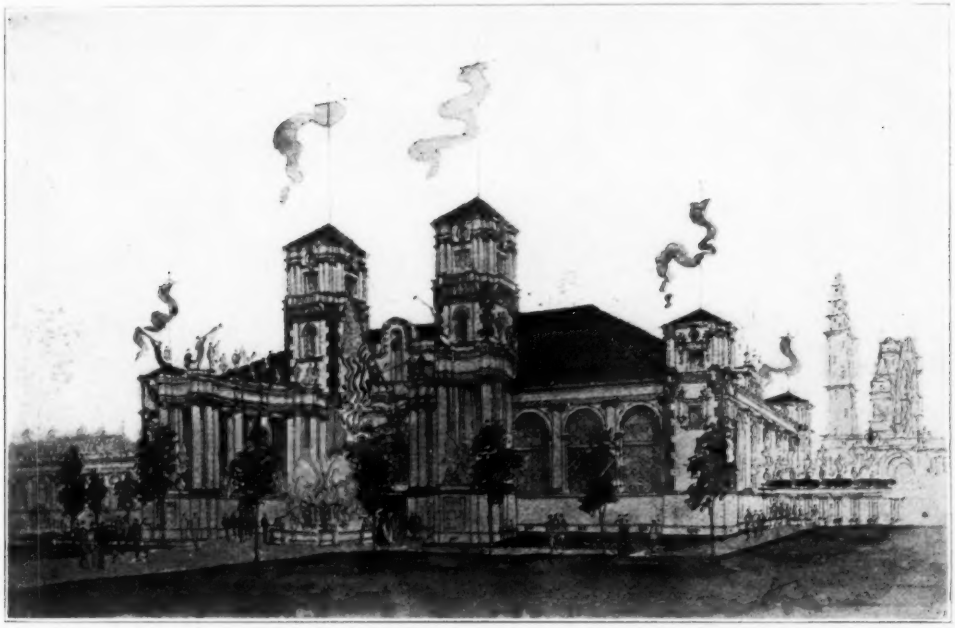
16.—RESIDENCE.

Ware & Treganza, Architects.

a very agreeable effect upon the cultivated stranger, as of an English parish church built some five thousand miles out of due place. It inculcates a needful and useful lesson of "quietness and confidence," which, as in the examples of the mission architecture, are qualities of which American architecture in general and possibly Western architecture in particular are in special need. But the ripeness and mellowness of effect that belong to this edifice are artistic and personal qualities, not communicable to an imitator except through the "strong propensity of nature" joined to a thorough professional training. It ought to be added that the church is much better than the drawing represents it to be, and I wish I had a photograph of the actual church to show you instead of the drawing. Though even that would fail to render the particular lucky tint of the stone, it would do more justice than is done by the drawing to the detail, which is in fact very successfully studied and adjusted in scale but which a perspective made in advance of execution leaves vague and sketchy. Another church, by the same architects, the "First Church of Christ, Scientist," is by no means so successful. It loses the security which is obtained by an adherence to "style" and seems to suffer from the uncertainty of the architects as to what sort of edifice a "Church of Christ, Scientist," may be or ought to be. Small blame to them on that account from the present writer. But as in the famous language of the Texan legislator, "it is difficult for a man to give expression to an idea of which he is not possessed of," it could not be expected that groping for

17.—RESIDENCE.

C. M. Neuhausen, Architect.



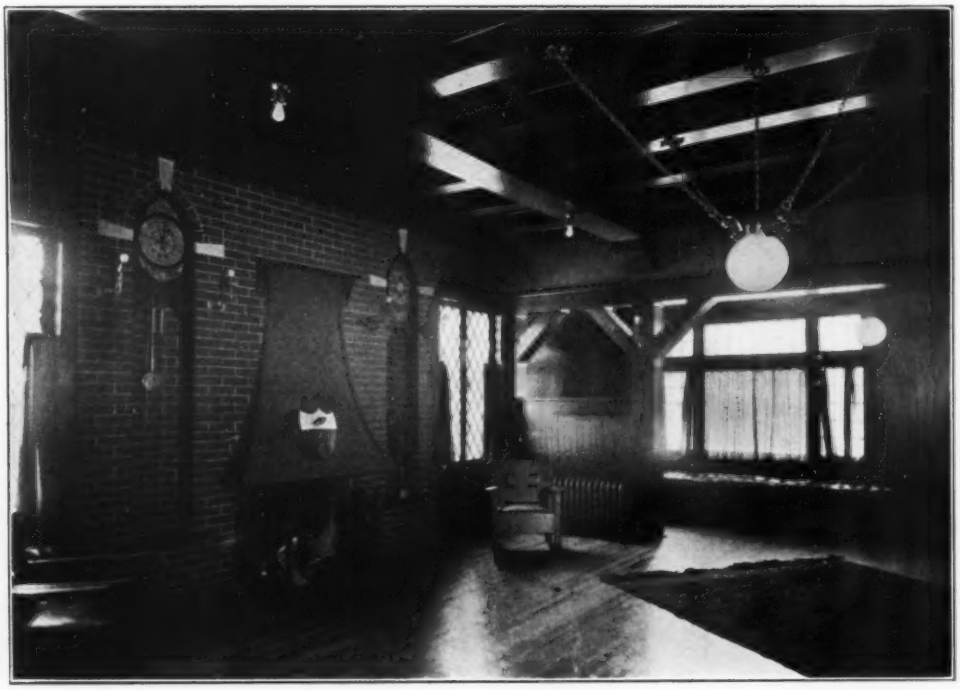
19.—NEW STATE FAIR BUILDING JUST BEING COMPLETED.
Ware & Treganza, Architects.

20.—STATE FAIR BUILDING. Ware & Treganza, Architects.

21.—ROOF GARDEN OF THE UNIVERSITY CLUB. Ware & Treganza, Architects.

18.—EMERY HOLMES APARTMENT HOUSE. J. C. Craig, Architect.

a type would be so successful as the adoption of a type perfectly understood and perfectly recognizable. This might be, from the exterior, a library or a school house quite as easily as what it is, whatever that may be, though it does not resemble that other abode of strange faiths, the Mormon Temple, in having no visible basis of design, the physical requirements of the case here supplying that basis, and the design being carried out in a trained and workmanlike manner.



22.—RECEPTION HALL, UNIVERSITY CLUB.
Ware & Treganza, Architects.

Of "Institutional" building, apart from the building of the peculiar institution, Salt Lake has not very much to show. The library, built by "Eastern" architects, seems to have been designed as a "kind of general expression," as Dickens' Mrs. Plornish said about the "Altro" of her Italian lodger. Which is to say that it seems quite to waive any attempt at "local color" or specific appropriateness, and bears no evidence that the designer had ever visited the scene of his exploit that was to be. It is quite true that if he had done so, he would still have had his own difficulties and "déroutements" in the way of groping for a type, a type of architecture suitable for a public library in Salt Lake City. But it looks, the library does, as if, in the absence of such indications as a study of the scene would have furnished him withal, he had taken the safe course of aiming "to hit it if it were a deer and miss it if it were a calf." In fact he produced an emphatic exterior, emphatic in scale to the point perhaps of inflation, which should not be likely to be "shamed" or shaded by whatever extravagance might "leap to light" on the adjoining block or the adjoining lot, and which should be able to hold its own in the face of all possible neighbors. That is at least the most obvious explanation of the library. One perceives, or thinks he does, that his edifice would have gained and that the architecture of Salt Lake might also

have gained if the terms of his appointment had permitted him to visit the scene and consider the local conditions. And yet one must admit that, from his own distant point of view, his proceedings may be vindicated by the result, since his building seems in no danger of being overslaughed by any later comers. And, of course, if there be no very noticeable help towards the solution of the specific local problem in the library, there is a certain satisfying assurance of general competency and knowingness.

23.—INTERIOR, UNIVERSITY CLUB.
Ware & Treganza, Architects.

But, as is the case throughout the West, and indeed throughout the country, it is the domestic building of Salt Lake which is most attractive and most interesting. And here also, as in general, it is true that the lions of the community, the "show places" to which the resident points the stranger with pride, commonly accompanied with an estimate of the cost of the show place, are not the houses in which the visitor who is a special student of the subject takes the greatest interest. The "hundred thousand dollar house" is apt to leave him cold, while he warms in the presence of a modest cottage which may have cost a tithe of that amount and upon which the chief expenditure has been that of thought. Such a visitor could not, for example, be reasonably expected to warm to anywhere near the point of ebullition at the sight of the "palatial residence" in hewn stone, the "four gray walls and four gray towers," towers roofed with tiles, while the pyramid of roof between them is covered with slate, with the classic portico and the Italian loggia and the nondescript dormer above on the flank, and the classic portico and the doubled dormer on the front. This edifice, the like of which, it is quite true, you may have pointed out to you in any city the size of Salt Lake in the East or the Middle West, leaves you cold, unless, by reason of your own temperament, it happens to leave you hot. The architect has evidently put into it all he knows, and he has not known to leave out half the things, and to subdue the rest to the purpose of an architectural composition.

There are much too many "features" to make a countenance. There is, in truth, a "thinginess" betokening a Teutonic origin, for is it not that that famous philoteuton, Carlyle, who has laid it down as the defect of the German intellect that it cannot eliminate the unessential, whereas in architecture the elimination of the unessential is the beginning of wisdom? Yet, quite possibly, this "fortuitous concourse" of irreconcilabilities is the costliest residence in Salt Lake.

Neither can one incandesce at the sight of any wall of the three "Colonial mansions," which are equally among the show houses of Salt Lake. It is a matter of sensibility. Why, for example, should the English parish church six thousand miles from home that we have just been praising come home to the wayfarer in Salt Lake

> With a Sabbath sound, as of doves
> In quiet neighborhoods,

and these three transplantations from the New England only half as far away strike him with a sense of violent transplantation and incongruity? Let the wayfarer whom they do respectively thus affect simply record the fact, and leave the explanation to professors of psychology. Also let the wayfarer record that on the Atlantic slope these reproductions which strike him so queerly in Utah would be quite fairly eligible as modern reproductions of "Old Colonial" with much greater affluence of means than the builders of that reproduction of the British Georgian were able to bring to their work. He cannot, in any of these cases, as in the preceding case, complain that the house is over-featured. For in each the portico is really the, and the only, feature. He may perhaps be entitled to complain in the case of No. 11 that the principal and only decoration of a mansion in rough and enduring masonry should be in smooth and perishable carpentry. And also one may perhaps justly complain that when an architect sacrifices to the Graces with a portico which is of no use, since the darkening of the windows is by no means compensated by the shading of the verandah, the sacrifice ought to be complete. The introduction of a gallery midway of the order, and cutting it to the eye, in two, always entails an awkwardness. Both these criticisms are obviated in No. 12, in which the material of house and portico is homogeneous, in which the austere Roman Doric of the order is entirely congruous with the building it decorates, and in which the rather difficult success is attained of designing an attic which is, although bearing a visible roof, quite in keeping. It is true that the same praise of congruity cannot be given to the balustraded porch at the side, which pretty plainly ought either to be different or not to be at all. And No. 13 would in a "Colonial" region be accepted as a very eligible Colonial mansion.

But distinctly more to the purpose is the next house on our list, No. 14, of which the prototype is the Italian villa, a harmonious, well balanced and well proportioned composition, in which the "features" of the loggia in front and the conservatory on the side suffice to animate the building without disturbing it, and in which the same purpose is attained by the combination of material, the stuccoed walls with their arching and quoining in brickwork. Though technically of quite a different origin and inspiration than the Mission architecture derived from Spain, this has the same excellent qualities of breadth and simplicity and repose. It is in rather striking contrast with the next, No. 15, the gabled fronts hung with tiles, and united and reconciled by the turret at the angle with the spreading circular verandah-roof at its base. I seem to recall the immediate prototype in an admirable house on Riverside Drive in New York, with which, at any rate, this has much in common. Not repose, though it is by no means restless, but a vigorous and spirited picturesqueness is the purpose here of the architect and his attainment. And it is soothing to the patriotic mind to consider that here is a piece of architecture which is both unmistakably artistic and unmistakably American. May its tribe increase, as in urban and suburban and rural houses it is unquestionably increasing. It remains to be added that this example of Ameri-

canism gains immensely from the skill with which its composition is adapted to the site, a knoll following and concentrically enclosing the sweep of the circular verandah.

Of the houses of less pretension, of no pretension in fact but that of outwardly expressing the fact that they are comfortable homes adapted to the needs of their occupants, I am sorry that I have but one example to show, No. 16, although the City of the Saints abounds in examples. Such an example of no historical style at all, but example of the habitation to which the merely well-to-do American attains, and to which every American may fairly aspire, is the more valuable, as No. 17 is the more valuable for not being exceptional but typical, and for having its like in every city and almost every village from ocean to ocean. As an architectural "symptom" it has nothing discouraging. As a social symptom it abounds in national encouragement.

Some of these Salt Lake houses come near that goal of the modern and especially of the American architect, the production of a building which, being of no "style," yet has style. But it is perhaps oftener in interiors than in exteriors that the goal is attained. The imported decorator, the worker in historical styles, to whom art means archaeology, would be apt to disparage such efforts by saying that they are of no style. And yet, unless his native sensibility had been entirely sophisticated out of him by his training and his practice, he could not deny that they have style. The idiomatic and vernacular character of the "nook" in particular must impress the beholder. It is simply a straightforward treatment of the material at hand for the purpose in view, and the sparing decoration seems to grow quite naturally out of the conditions, as naturally as the decoration, say, of a Polynesian paddle. This is "originality" in the best sense, the sense not of novelty but of sincerity. It has no reminiscences of historical styles, though one can say with considerable confidence that it could not have been done without study of historical styles and the sensibility that comes of that study. These characters of straightforwardness, of simplicity are in evidence in the interiors of the University Club to the same result of vernacularity. It is such things as these, more frequent in the West than in the East, that give our best hope for the future of American architecture, such things much more than the "examples" and the reproductions. It is gratifying to see that the City of the Latter Day Saints has its share of them.

Franz K. Winkler.

SECOND YEAR WORK—DRAWING FROM THE ANTIQUE.

The College of Architecture

Cornell University

"I will lift up mine eyes unto the hills;" the words of the Psalmist sing themselves in the mind of the beholder who gazes from almost any point on the campus of Cornell University over the panorama spread before him. Below in the lap of the valley nestles the little city of Ithaca—an aspiring little city, too; for as the university has grown, gradually extending itself more and more widely over the broad acres that constitute its campus, the town has crept steadily up toward it, until now no inconsiderable portion of it lies on East Hill at the very gates of the university. The main town, however, still lies in the valley, which stretches quietly away beyond it toward the southwest to be lost at last in the blue distance where South Hill, closing it in in that direction, converges upon the long hill to the west. Across the valley and squarely facing East Hill with its crown of university buildings, rises the massive bulk of this western hill, extending the whole length of the valley, its long, almost unbroken ridge silhouetted against an infinitely variable sky. Thus snugly enclosed on three sides by the protecting highlands, the little valley slopes ever so gently toward the north until it drops away beneath the waters of Cayuga Lake, which stretches through many miles of its long river-like expanse before it turns and sinks out of sight at last behind the dwindling spur of West Hill.

One cannot help wondering whether some Wordsworthian notion of the educative power of beautiful natural surroundings influenced the mind of the founder in selecting this site for his great university; whether he, too, understood the subtle power of that "unconscious intercourse with beauty old as creation" in shaping the developing soul. It would be difficult indeed to find a spot better fitted for opening the heart of youth to that sense of beauty without which true culture is impossible; and doubly fortunate is it that here in such surroundings should have arisen one of the comparatively few architectural schools of the country. For the architect no less than for painter, poet, or sculptor, an unerring instinct for beauty is an indispensable requisite; and what influence more potent for awakening this instinct if dormant, or for sustaining and developing it if already active, than the intimate contact and communion with nature possible—nay, almost inevitable—at Cornell? One lifts tired eyes from book or drafting board and they rest almost of necessity upon the eternal quiet of the distant hills, now lying in full sunlight, every detail distinct, or again dimly seen through the veiling mists of an approaching storm; now mottled with the shadows of flying clouds; now bathed in the unspeakable glory of the setting sun, a short lived splendor of crimson and gold; now sinking into the purple indistinctness of approaching night.

Has the student "gone stale," to use his own expressive term? Has he worked over some baffling problem in design until all labor is bootless? The possibility of physical and spiritual recuperation lies close at hand. Hardly a stone's throw from the doors of White Hall, the home of the architectural school, runs the deep gorge of Fall Creek, a narrow canyon sinking sheer through the shale rock to a depth of here fifty, there a hundred, there two hundred feet, musical in summer with the murmur of its much diminished stream, reverberating in flood time to the roar of sounding cataracts. A short walk up the squirrel haunted woodland path bordering the gorge brings one in sight of the picturesque Triphammer Fall backed by the great dam, behind whose barrier the creek widens into Beebe Lake, in summer a mirror reflecting the tranquil beauty of its own wooded shores, in winter a sheet of polished ice hissing under flying

steel-shod feet or under the mighty rush of the toboggans with their noisy crews, which the great double toboggan slide is constantly disgorging upon it. Down stream a little way one passes the charming cascade known as Horseshoe Falls, and again a little way and he comes upon Ithaca Fall, its tumbling waters tearing themsleves to foam on the broken face of the rocky wall as they drop into the deep pool a hundred and sixty feet below.

Perhaps half a mile away across the campus, and forming its southern boundary, as Fall Creek does its northern, runs Cascadilla Gorge, as beautiful as its name. Less wild and rugged than Fall Creek, it boasts no roaring cataracts but breaks into innumerable little cascades, not less beautiful and perhaps more musical. Here vegetation has found more frequent foothold and the bareness of grey wall has given place at many points to the exquisite greens of soft mosses, feathery ferns, or low-growing bushes, alternating with the darker masses of sturdy evergreen trees.

Or if hill and vale, woodland path and rocky canyon fail to charm, there is always the lure of the lake. Swimming, rowing, sailing, canoeing, all are possible to perfection and bring the necessary relaxation. Or, if the mood serve, better still is it to wander idly along the shore, eyes and mind open to every impression. He must be a dullard indeed in whom, under such circumstances, no color sense is born. Color lies all about him, changing with infinite variation from the cold blues and browns and purples of dull winter days through the tender greens and pinks of early spring to the flaming crimson and orange of October sunsets.

A GLIMPSE OF GORGE, VALLEY AND LAKE.
Ithaca, N. Y.

Only the man who is esthetically totally depraved could fail utterly to respond to the influences surrounding him in the college of architecture at Cornell. Occasionally, to be sure, such an unregenerate one sets foot within her walls; but he soon finds that he does not breathe easily the atmosphere of the college. Beauty-blind himself, he cannot share the enthusiasm of his comrades for the

great monuments of the past, their joy in the creations of the great moderns, their dreams of a still greater future for their chosen art. If he be honest and serious he soon discovers for himself or is gently but firmly advised that he can find work better suited to his capacities in some other college of the university. For the born idler and scoffer there is reserved the "outer darkness." And thus in the student body as a whole, pursuing sanely and healthfully amid beautiful natural surroundings the study of past

THE SOPHOMORE-FRESHMAN CONTEST TO CAPTURE VICTIMS FOR THE GROTESQUE "PEERADE" PRIOR TO THE FRESHMAN BANQUET IS NOW AN INSTITUTION AS REVERED AS FOOTBALL, BUT WITH MORE FUN AND LESS DANGER.

achievement, there is preserved the spirit of serious striving for the best in art and in humanity.

During the past year there has appeared in various magazines some little discussion of a subject by no means new—namely, the relative advantages and disadvantages of the great university as compared with the small college. Both have their enthusiastic champions, the upholders of the great institutions declaring that the cosmopolitanism of the big universities tends more surely to produce men of broad culture with a wide grasp of affairs and a clear understanding of world conditions; their opponents urging no less positively that only the close personal contact between teacher and student possible in the small college can furnish the vitalizing element necessary to transmute knowledge into culture. For the student in the college of architecture at Cornell University the question is of no moment. He is at once a member of the great university and of the small college, and may, if he have the will and the insight, reap the benefits accruing from both systems.

Within the college the relation between teacher and student is such as to give the greatest opportunity for the play of personality. As every one at all conversant with the nature of architectural study knows, the major portion of the work is of necessity accomplished by means of individual as opposed to class

instruction. In Cornell such individual instruction is given wherever possible. The teacher is no formal lecturer, appearing at a stated moment, dealing out information *en bloc* for an hour, and then disappearing from the student's ken until his hour strikes again. He spends hours each day in the drafting rooms, watching the progress of the work, praising here, condemning there, explaining the principles involved in his criticisms, setting ideals before the students, stirring their imaginations, inspiring them to more earnest work. Nor a whole the architectural students enter with an enthusiasm that makes their presence distinctly felt. Although the college is one of the smaller ones of the university, its students constituting only about a fortieth of the whole, and although the requirements of the course are severely exacting, there is hardly a line of general student activity in which they are not ably and more or less numerously represented. For the intercollegiate athletic contests as well as for the university athletic organizations the college regularly furnishes its quota.

COLLEGE OF ARCHITECTURE, CORNELL UNIVERSITY.
The great drafting room where all classes work together in architectural design.

does this intimate relation of teacher to student close with the day's work. He is not work-fellow merely; he is play-fellow, too, and that without loss of dignity on his part or of respect on the part of the student. In all college festivities he has an important share. A college picnic or a college banquet without the faculty? The students would never countenance the suggestion, the faculty would wonder at it, for both prize equally the fine spirit of good comradeship, of hearty co-operation, that characterizes all their relations.

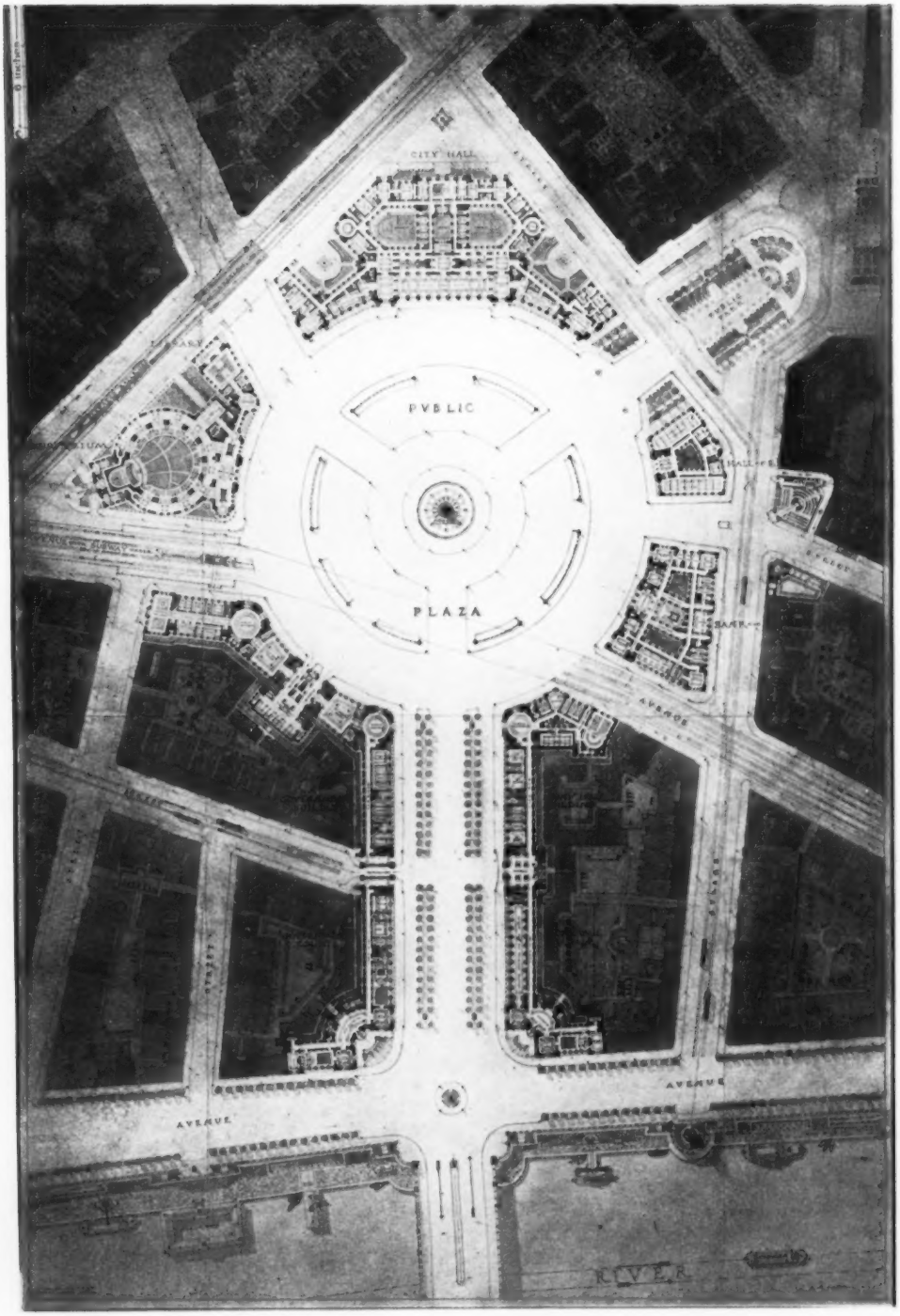
Into the wider life of the university as Much more prominent is it in other directions. In the musical and dramatic clubs its representation is almost invariably large in proportion to its size; while the student publications of various sorts depend for much of their artistic matter upon the contributions of the "architects." During the year just closing, for example, the college has furnished the leader of the glee club, who is also university cheer leader; the manager of the football team; the artistic editor of the Cornellian, the Junior class annual; and the acknowledged "star" of the Masque, the university dramatic club;

besides other less prominent representatives of the various student associations and activities.

The architects may be depended upon, too, to furnish at least their full share of any fun afoot in the university. It is indeed becoming a tradition at Cornell that most of the "stunts" on the campus originate in the college of architecture, "stunt" being the regular and only allowable Cornell equivalent for any clever, mirth-provoknig trick or exhibition. It was they who, when the Chinese imperial educational commission was visiting the university and being politely and somewhat elaborately entertained, added a certain piquancy to the entertainment by displaying on the front of their building a huge white banner with a fiercely realistic yellow dragon rampant. It is the architects who on St. Patrick's Day, choosing their colors with charming impartiality, always decorate their building with great streamers of orange and green with a banner over the main entrance bearing a green shamrock on an orange ground. Not even this year, when St. Patrick's Day fell on a Sunday, was the custom allowed to lapse. And it is to the architects, perhaps, more than to the students of any other college, that the university public looks on Spring Day for clever and original devices for wheedling money out of it for the benefit of athletics.

Doubtless some of this inventiveness is due to the conditions under which the work of the college is carried on. The students spend a large portion of their working day in great open drafting rooms where they are allowed almost unlimited personal liberty. Upon the freshmen, to be sure, certain restraints are imposed, partly by rule of the faculty, but in much larger measure by the traditions of the college. The faculty prescribes, for example, certain definite hours of drafting room work for the freshmen; but college tradition, basing its prescription perhaps on the adage that children should be seen and not heard, requires in addition that they shall preserve a demeanor of quiet decorum in the performance of it. There must be nothing of what is technically known as "rough-housing" in the freshman drafting rooms. They are also denied the privilege of wearing any distinctive dress. The sophomores may wear white duck coats and the upper classmen loose linen or denim smocks,

COLLEGE OF ARCHITECTURE, CORNELL UNIVERSITY.
The Freehand Drawing Department. This view shows only about one-fourth of the room.



FOURTH YEAR DESIGN—A CIVIC CENTER, PLAN.

the color of collar and other trimmings indicating necessary distinctions; but for the freshmen only ordinary street dress *en régle*. Once out of the freshman limbo, the students find practically all external restraints upon their conduct in the drafting rooms withdrawn; yet they almost never abuse their liberty. They talk; they laugh; they sing over their drafting boards; they criticize each other's work with a frankness that leaves little to be desired; they chaff each other mercilessly, sparing no one's foibles; yet all the while the work goes steadily, if merrily, on, all the more steadily, doubtless, because so merrily.

FOURTH YEAR DESIGN—A CIVIC CENTER.—BIRD'S-EYE VIEW.

And now what is the character of this work? What is it that the college attempts to give to its students? Cornell, in common with other educational institutions in this country, first established her course in architecture as an adjunct to already existing courses in engineering. Here, as elsewhere, this action was dictated partly by expediency, but partly also, it must be admitted, by a general misconception of the real requirements of the profession; by a failure to grasp the fact that architecture is primarily a fine art—the greatest of the fine arts—not a phase of engineering; that its problems are primarily esthetic problems, not problems of engineering, however important the latter may be. The result of this misconception was to give to the students brought up under the old régime at least an inadequate if not an actually false and misleading preparation for success in the field of practice. The profession was demanding architects, and the American schools were sending out engineers, most of them to be relegated permanently to positions as salaried draftsmen, while the great things were conceived and executed by the men who had received the broader and more truly architectural training of the great school of fine arts in Paris. If here and there an architect trained only in American schools rose to eminence, he did so by sheer force of

personality, and his success came in spite of his training rather than because of it.

Gradually, however, the schools awoke to the fact of their failure to meet the real requirements of the profession for which they were ostensibly training their

to the requirements of American practice. The movement is still in its infancy, to be sure, and no one knows better than the men who are directing it that the type of architectural education so far evolved is far from perfect. On the other hand, no one could be more confident than they

FOURTH YEAR DESIGN—AN AUDITORIUM, SECTION.

men. Schools were reorganized, curricula were revised, Cornell's among the rest, and there gradually emerged a new type of architectural education, which, whatever its critics may say of it, is not a mere copying of old-world methods, and is certainly much better suited than either its predecessor or its foreign competitor

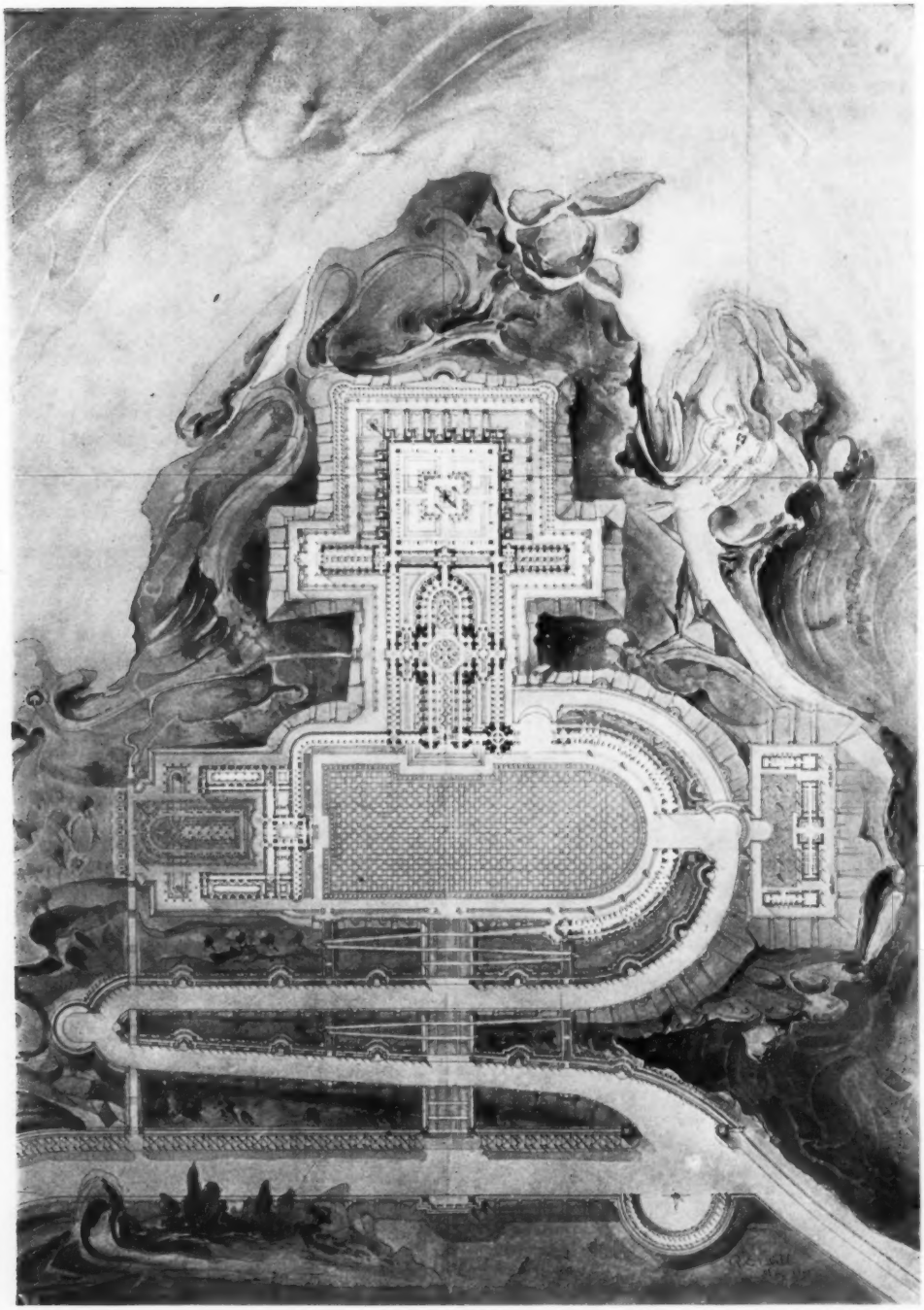
that the American schools are at last working along the right lines, cherishing and implanting the right ideals, and paving the way for a broad system of architectural education, culminating perhaps in a central school of fine arts greater and, for us at least, better than anything that the old world has evolved. Into the new

movement Cornell has entered heartily, constantly revising her curriculum to make it conform more perfectly to changed ideals, now rejecting a subject that experience has shown to be relatively valueless for the architect's purposes; adding as fast as possible other subjects, the need of which has been urgently felt and expressed; demanding here and there a change in the character of the instruction given in certain subjects in order to adapt them more perfectly to the needs of the architect; making throughout the curriculum the necessary redistribution of emphasis upon the various lines of instruction.

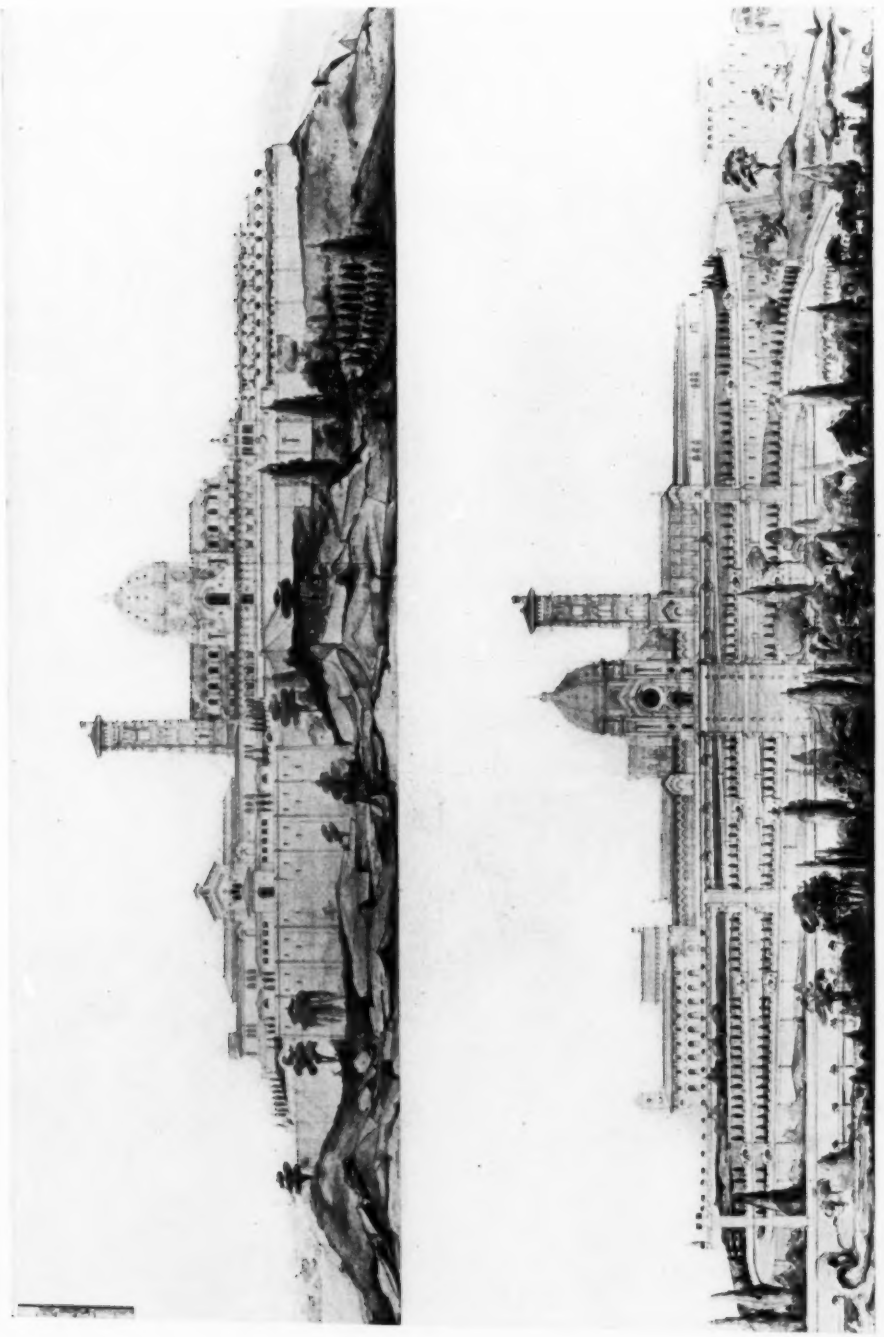
Gradually under the constant demand of the profession that the architectural schools furnish men ever better and better equipped, both technically and culturally, a great change has been wrought in the character and aims of the course. In the earlier days almost the whole of the first two years were devoted to the so-called general culture studies—language, mathematics, history, science—and only another brief two-year period was left for technical training. That hardly sufficed for the making of a passable draftsman; for the making of an architect with any grasp of the history and significance of his art, any workable knowledge of the theory and practice of design or of the principles of construction, it was obviously totally inadequate. To reduce the amount of general training was quite as obviously impossible. Every moment of it and more was needed as preparation for the more specialized work along the same lines to be given in connection with the history of architecture and the theory of design. And so Cornell said in effect to the preparatory schools and colleges: "You must do this work for us. We need the whole of our allotted four years and more for the absolutely indispensable technical training. We cannot take your men until they are ready for that training." Gradually, but as rapidly as possible, she has advanced her entrance requirements, until at the present time they are higher than those of any other school of architecture in the country save only that of Columbia, which, under the plan that goes into operation in the fall of 1907, will become practically a graduate school. These advanced entrance requirements have enabled Cornell to make her training technical from the very beginning of the course; and have misled some too hasty critics, who, concentrating their attention upon the courses given in the school only and quite overlooking the character of the entrance requirements, have remarked, even in print, that Cornell does not require modern language, certain mathematics, etc., taught in other schools and usually regarded as essential to any proper scheme of technical education. The criticism, founded upon a misconception, is of course innocuous.

Not for a moment would the Cornell college of architecture consider the possibility of reducing the amount of "general culture" work required of her students. On the contrary, she believes that it ought to be very considerably increased, particularly along the lines of history, language, and literature; but that most of such additional work must be done in the preparatory schools, whether secondary or collegiate. So far as her own course is concerned, she is and hopes to remain a purely professional school, whose purpose it is to take the properly prepared student; develop in him the necessary visual and manual expertness; give him the necessary equipment of physical and mechanical knowledge; reveal to him something of the past and present significance of his art for civilization and humanity; above all to cultivate his esthetic sense, to develop latent artistic qualities, to set free wherever it exists the creative spirit by giving it such command over the technical means of expression as will enable it to work its will in the world.

To this end, as has been said, the student at Cornell enters immediately upon his technical training, the two main lines, esthetic and structural, along which the work must proceed being at once clearly indicated, although the major portion of the time, as is necessary and fitting, is given throughout the regular course to the esthetic training. For students wishing to specialize in construction for the purpose of architectural engineering special arrangements are made, the com-



FOURTH YEAR DESIGN—A MONASTERY. PLAN.



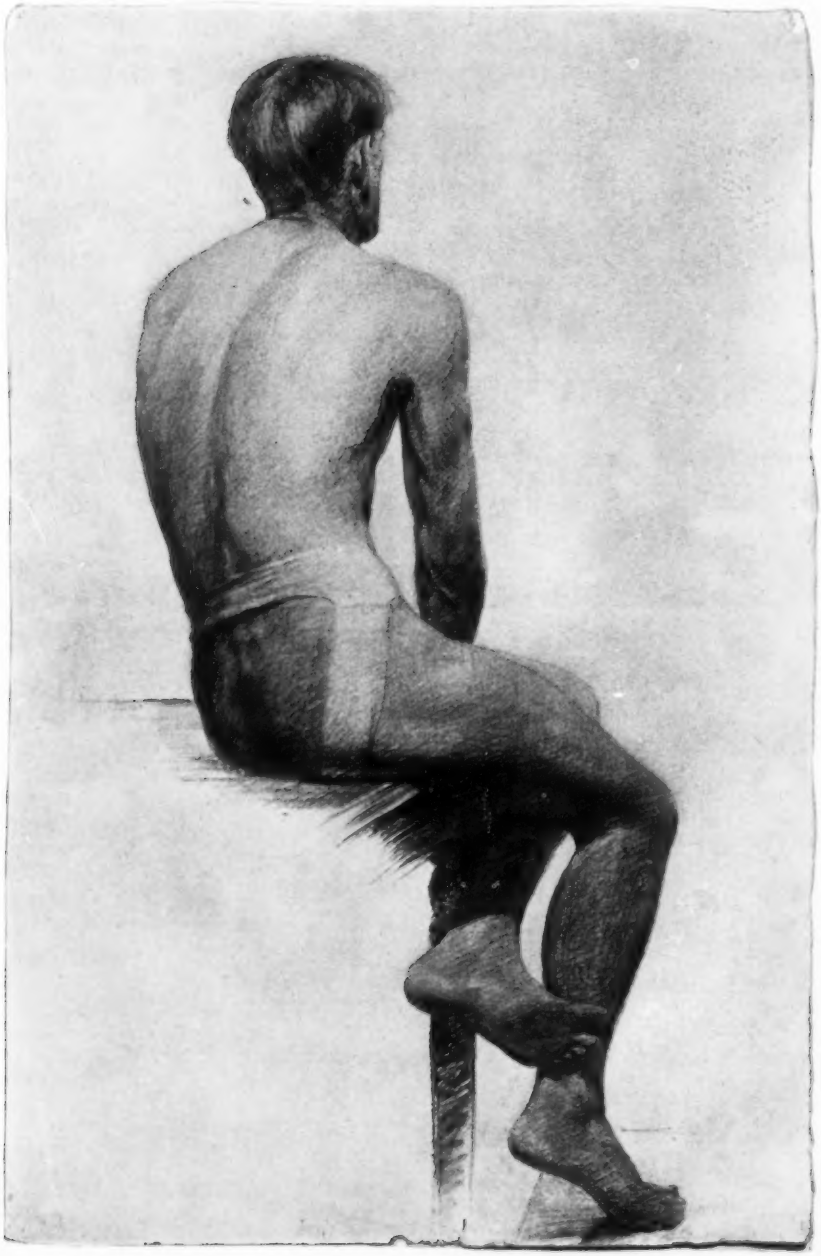
FOURTH YEAR DESIGN—A MONASTERY.
Side Elevation.
Front Elevation.

bined curricula of the colleges of architecture and civil engineering offering opportunity for a wide choice of subjects. To meet the needs also of that large class of ambitious young draftsmen in offices to whom, because of lack of regular preparation or of pecuniary means, the four year course is impossible, but whose office experience has convinced them of the necessity of the wider training rarely obtainable except in the college, there is offered further the two year special course in architecture. This does not lead to a degree, though the work of the course may be counted towards graduation if the student wishes at any time to complete the regular course.

From the moment he enters the college until he leaves it a large portion of the student's work is of exactly the same character and quality as that given in the great art schools. He begins work at once in freehand drawing, sketching first in pencil simple groups of geometric figures, and then, as eye and hand acquire skill, passing on to drawing from the cast, particularly from the antique, in charcoal and pastel. Nine hours a week throughout the first two years of the course are spent in this work. During the last half year of this period the student attempts expression in another medium also, being given six hours a week of water color painting from still life and from nature. This purely artistic training is continued through the junior year by means of a course in clay modeling and another in pen and ink rendering, sketching and illustration, and culminates in the senior year in the work of the life class. In all of this work the rapidity of the student's advancement depends solely upon his proficiency. Promotion may occur at any time, and it is possible for the student of special ability to accomplish work considerably in advance of that required in the course.

Nothing in the history of the college during the last eight or ten years has been more gratifying to those interested in its future than the enthusiasm with which the students have thrown themselves into this vitally important work and the excellence of the results attained. It is not merely that the students have executed fine drawings—"show pieces" that would do credit to any art school. That is gratifying, to be sure, but for the architect, at least, a deeper satisfaction lies in noting the effect of the thorough training in freehand drawing upon the purely architectural work. Not only has it given the necessary manual dexterity, the indispensable command over technical resources; it has also helped in very large measure to create about the student the artistic atmosphere, to give to him the artistic point of view, without which the all important work of design must end in utter failure. The results have abundantly justified the eight hours and more per week given on the average to this work through the whole four years of the course.

But the architect must be more than technician, more even than technician with a greater or less degree of creative power. He must be a man of broad general culture with a thorough-going special knowledge of the evolution of his chosen art and of its relation to certain great historic movements and to civilization as a whole. To make him this in perfection is beyond the power of any college. Only the "years that bring the philosophic mind" can do that; and they must be strenuous years, too, brimful of hard work and unremitting study. All that any college can do is to lay the foundation, as Cornell does, by means of as thorough and at the same time as comprehensive a study of the history of architecture as time will permit. At Cornell this work is begun in the freshman year and continued through the first half of the sophomore year, the attempt being made to trace as fully as possible the origin, growth and decline of the architectural styles and to show how they have reflected the great movements of civilization. The student is required to familiarize himself with as many as possible of the great masterpieces and the effort is made to cultivate in him a taste for the best in architecture. This work is continued in the junior year by means of a course in the history of the accessory arts of painting and sculpture—accessory at least from the architect's point of view—and later by a course in historic



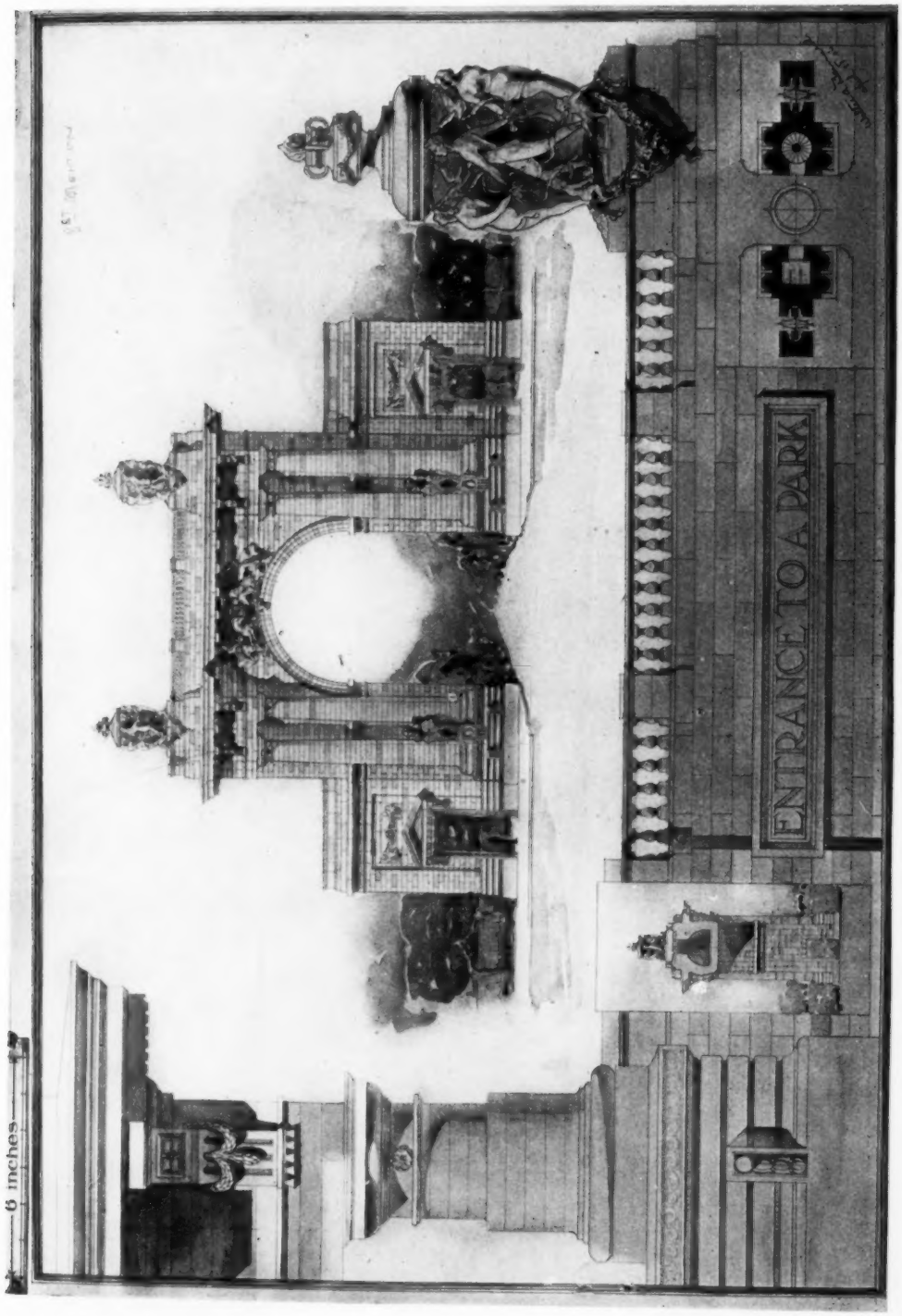
FOURTH YEAR WORK—DRAWING FROM LIFE.

ornament, and is completed in the senior year by a review of modern and current architecture with a thorough-going critical analysis.

It must not be supposed, however, that Cornell in her effort to emphasize the esthetic aspect of architecture sacrifices in any way the vitally important work in construction. The study of the principles of construction and practice goes on hand-in-hand with the work in design. The courses in mechanics, strength of materials, etc., which are required of all students taking the regular course in architecture, are carefully arranged to give a simple but comprehensive training in the solution of such structural problems as an architect is called upon to solve. It is, however, recognized that an architect can not be a specialist in all of the many branches of engineering allied to his profession; and therefore many subjects, such as sanitary engineering, electrical service, heating and ventilating, etc., must be treated in a comparatively superficial way, the instructor of necessity contenting himself with making his instruction sound so far as it goes and pointing the way for further special study. In arranging the courses dealing with problems of practice, such as the courses in working drawings, in details, in specifications, etc., the college finds quite definite limitations upon the work that may be undertaken advantageously. These courses are not intended and do not profess to give to the student such detailed knowledge of office routine as will make him a valuable routine draftsman the moment he makes his debut in an office. They do attempt by means of a short but severe training in fundamental principles and essential details to put into his hands the means of acquiring under the pressure of office practice a completer and more rapid mastery of the necessary routine than either office or college alone could give him. Further, and not less important, these courses, carried along hand in hand with the work in design, assist in no small degree in keeping that work sane and rational.

A knowledge of architectural design in its broadest and deepest sense implies a previous knowledge of every other subject in the course. In the making of a curriculum for a college of architecture it is the "far-off, divine event toward which the whole creation moves," and the work which contributes most directly towards imparting such knowledge receives, logically enough, the greatest emphasis. At Cornell the work of design proper does not begin until the sophomore year. It is the paradise toward which the freshman climbs through a series of stages—elements of architecture (a study of the classic orders with accompanying problems), descriptive geometry, shades and shadows, and perspective—stages not always of absorbing interest in themselves but tolerable in the issue. Once begun, the study of design receives, according to the printed schedule of hours, just one university hour (three hours of actual work), less than all other subjects together. As a matter of fact, it probably does in most cases receive the major portion of the student's time, for the students are almost without exception willing and eager to give to design more than the allotted time.

After the freshman year there are no definitely prescribed hours for drafting-room work. The rooms are open from eight in the morning to half-past ten at night, except on Saturdays, when they close at five, and the students come and go at will. They are, of course, required to accomplish in design, as in other subjects, a definite amount of work, and are further required to do it in the drafting rooms under the supervision and criticism of the professor of design; for the rest, they may arrange it to suit their own convenience. It might be supposed that such apparent laxness of discipline would result in a considerable waste of valuable time. As a matter of fact, not only do the students "put in" in the drafting rooms more time than they did under the old system of definitely prescribed hours, but they are not even then content, and send to the faculty at intervals vain petitions for an extension of drafting-room hours. In reality the laxness is more apparent than real; for, in the first place, the requirements are so heavy that



FIRST YEAR WORK—A STUDY IN THE CLASSIC ORDERS.

few students can idle with impunity; in the second, the competitive spirit among them is so strong that few of them wish to idle.

After the necessary preparatory work of the freshman year the work in design begins in the second year with what is known as second class design, and continues through the year, the student being expected to devote to it about twenty-four hours per week of drafting-room work. Then, in order to counteract any tendency on the part of the student to divorce his design from his construction, he is required to suspend his work in design temporarily and devote a half year to a study of building materials, working drawings, details of construction, and the principles of specification writing; after which, in the last half of the junior year, he enters upon the work of first class design and continues it without interruption to the end of his course, spending during the first half year of this period about thirty hours per week in the drafting room; during the last year about thirty-six.

The work in design, both first and second class, is accomplished by means of a series of problems, part of them major problems requiring from three to six weeks for their solution; part of them sketch problems, which must be completed in a day or two. About six major problems and about ten sketch problems are issued during the year by means of printed programs setting forth the conditions to be met in their solution. When a major problem is issued the student is given a day or more in which to prepare his preliminary sketch or "esquisse." In this he indicates briefly but clearly the principal motives of his design, and to this he must adhere in the execution of the finished drawings. Any radical departure from the solution indicated in the preliminary sketch will place a design, no matter how excellent in other respects, "hors de concour," and no credit will be given for it, the purpose being to teach the student to formulate his ideas quickly and definitely and to compel him to adopt some definite solution at once in order that he may hope to complete his problem in the necessarily limited time assigned to it.

Upon the completion of a problem the drawings are removed to the exhibition room and hung. Here they are "judged" by the whole faculty and graded mention, first mention, second medal and first medal according to merit, each of these grades being equivalent to a certain number of "values" or credits. In the major problems a mention receives one value; first mention, two; second medal, three, and first medal four, while the sketch problems count half as much. For graduation the student must receive a fixed number of values and must complete a specified number of problems. Problems failing to receive a mention may still be sufficiently good to count one in making up the number of completed problems, or they may be so conspicuously poor as to be rejected altogether. The medal grades are rarely attained, first medal having been given to an undergraduate only twice in the ten years and more during which this system has been in operation.

After the judgment has been rendered and the grades determined a public criticism is held in the presence of the members of the class, who enter with the greatest freedom into the discussion. One after another the designs are criticized in detail in such a way that these public criticisms become practically a series of informal lectures on the theory of design, with an abundance of concrete illustration, enforcing in a manner not likely to be soon forgotten the principles involved. As often as is practicable, the professor of design issues, instead of one of his own problems, the current problem of the Society of Beaux Arts Architects. This is completed, judged, and graded in the same way as are the ordinary problems; and then the best designs are sent to New York to enter the wider competition with solutions of the same problem from other schools and from individual draftsmen all over the country. The effect of the Beaux Arts competitions in arousing enthusiasm and intensifying the competitive spirit among the students has been uniformly excellent.

After the judgment and criticism all drawings, except, of course, in the case of a Beaux Arts Society problem, those chosen for the competition in New

York are allowed to hang in the exhibition rooms until replaced by the next problem; so that there is a continuous exhibition of students' work at the college. One of the questions most frequently asked by the lay visitor to these exhibitions is whether the designs are original. The reply is that, so far as such things can be original, they are. Only in the archæological work of the freshmen in connection with their study of the classic orders is there any direct copying of architectural motives. The work in design proper is from the beginning an attempt at self-expression. Not that the student can or in any sense does break with his architectural past. He is, of course, bound by the conventions and traditions of his art; he is constantly borrowing motives and adapting them to the purposes of his design; not infrequently his whole design is conceived very clearly—and very frankly—under the inspiration of some well-known masterpiece; but his solution is, after all, always *his* solution, poor and crude and barren enough sometimes, it must be admitted, but essentially self-expressive.

Throughout the work the greatest care is taken to preserve and develop the individuality of the student, to prevent the swallowing up of weaker or less developed personalities in that of the instructor; and Cornell has consequently escaped the charge sometimes brought against some of the *ateliers*, that all the work issuing from them is only an echo, fainter or clearer, of the work of the *patron*. Her students come to her from the ends of the earth and from every walk of life—raw material produced under the most widely diverse conditions, out of which must be wrought, so far as may be, not skilled draftsmen merely, but creative artists. If she is to accomplish her purpose she must preserve the integrity of the student's personality; must send him out again into the world from which he came not less himself but more, because more fully master of his own powers and more capable of self-expression. That is her faith, the substance of the thing she hopes for.

The cost of taking a course in the College of Architecture varies greatly according to the experience and ability of the individual student in the management of his personal affairs. The fixed charges are comparatively light and consist of a matriculation fee of $5 when the student enters the university, a tuition charge of $125 a year while he is pursuing his studies, and a graduation fee of $10 at the completion of his course, or a total of $515 for a four year course.

The cost of books, instruments, materials, etc., is rather large in the first year, say $40 to $50, but the instruments then purchased will last a lifetime and may be considered as professional tools rather than as temporary supplies. After the first year the expenses for materials, books, etc., will average from $10 to $15 a year, the total for a four year course being from $70 to $90.

The cost of living in Ithaca, including board, room, fuel, and lights, varies from $4 to $10 a week. By the formation of clubs students sometimes reduce their expenses to $3.50 per week or even a little less.

As a general summing up, it may fairly be assumed that the course can be taken on a total expenditure of $400 a year, but that the cost to the majority of the students is from $450 to $600 a year. While there are some who manage on less than $400, it is equally true that there are many others with means less limited who spend considerably more than the $600 a year.

Gertrude S. Martin.

THE NEW CHEMICAL NATIONAL BANK—ENTRANCE.
270 Broadway, New York. Trowbridge & Livingston, Architects.

Engineering in Architecture

The object of this discussion is to insist that a reasonable acquaintance with the principles of structural engineering is of prime importance to the architect in the practice of his profession as a fine art. The architect's interest for engineering is a peculiar interest, claiming his attention for reasons different from those which engage the professional engineer. The greatest architects in history were also engineers, but in a special sense. Not engineers as the term is today understood technically. The engineer makes accurate and elaborate calculations of difficult problems in construction, his primary object being to obtain the maximum strength with the minimum of material and labor. This is not the architect's view of engineering; he regards it rather from an artist's point of view and uses it as it helps him to achieve artistically what he is striving after, not forgetting its utilitarian side which becomes for him, however, a matter of somewhat less concern.

If we should subject the best buildings of each historic period to a rigid examination with regard to their constructional excellence, we should no doubt find them as worthy of being held up as examples for emulation, for their structural qualities as for their more strictly architectural merit. Such an investigation would point to the fact that the architects who designed those buildings which have secured the approval of succeeding generations, had a considerable knowledge of engineering which they were able to apply for an architectural purpose. Of just what this knowledge consisted or how it was obtained we cannot be sure; the fact remains that they knew engineering and regarded it rather as a part of rational architectural composition, a sort of *Gemüthsbildung*, than as an exact science which is to be set down only in formulae and figures.

This kind of engineering knowledge seems somehow to have been eliminated from the training of the contemporary architect who no longer pays much attention to the aesthetic side of engineering, which if it happens to apply to a particular piece of work in hand, is treated independently by the structural engineer. Recent developments in American architecture have produced new relations between engineer and architect. In some cases the architect will frankly admit that he knows nothing about engineering, which he thinks should not in any form be considered as part of his work. In other cases he will give himself credit for knowing as much about the minutae of engineering as the man who makes this his business. These instances are, of course, the extremes which have resulted in much waste to clients and produced endless difficulty between architects and engineers. They do not understand each other and will do their most efficient work in cooperation, only when each of them understands what the other is driving at. To complicate the situation and make it seem more difficult of adjustment, the duties of the modern architect and engineer, especially here, where the world's building activity is greatest, have so multiplied that neither has any longer the time or the inclination to face the issue in a scholarly way. All his spare time is now devoted to the immediate problems of business and the requirements of a complex life, matters that are ever assuming for him an increased importance among his professional assets.

But because the architect of today is no longer as intellectually inclined as his predecessors it is not to be inferred that he is less well equipped to do his work than they were for theirs. *Tempora mutantur* is perhaps the best reason that can be given for the architect's neglect of certain lines of mental activity, and his closer attention to others. The rapid strides of science and the attendant growth of business have had their effect in swerving him from his former course. In his eagerness to keep pace with the times he has practically been forced to rearrange his schedule and this rearrange-

ment resulted in his slighting subjects which concern him even more to-day than they did a generation ago. Engineering is one of these subjects which has experienced its due share of neglect at his hands. That he is awakening to his mistake is becoming more apparent in his increased interest and participation in large engineering projects that are at present in course of construction, especially those in and around New York City; the new bridges spanning the East River, the railroad stations and the ferry terminals claim their share of his attention and even begin to interest the profession at large. And new problems are continually coming up to remind him of the importance which an engineering knowledge is bound to play in his profession in the future and to make him realize that he must meet the demand if he hopes to maintain his position.

Structural engineering in the broadest sense concerns the architect of today from what might be called a *qualitative* point of view. It is for him the art of designing the structure of his architecture, be it wood, stone or metal, in an idiomatic and aesthetic manner. It enables him to determine in a general way the character and distribution of the structural members of the building and gives him a freedom in designing which he cannot safely exercise without this engineering knowledge as a basis. Engineering in this sense is an art, as it should be, for the architect's purpose. And now comes the engineer's side of the problem which, while it must partake of the *qualitative* side to produce the most satisfactory results, is chiefly *quantitative* in nature, being an accurate computation and proportioning of members to effect the maximum of stability with the greatest possible economy of material. The distinction between *qualitative* and *quantitative* engineering is not one between theory and practice, but rather between the art and the science of engineering, between *how* for the architect and *how much* for the engineer.

But the architect, such are the exactions of modern practice, cannot afford to confine his knowledge of enginering to qualitative considerations entirely. While a thorough understanding of the basic principles of statics in building construction is indispensable to him, he must possess enough quantitative knowledge of the subject to be able to solve readily the simpler problems that come up in daily practice. To this extent he should be a structural engineer, including in his store of information the necessarily related mathematics, physics and empirical data. But if he respects his professional reputation as an architect, let him stop here, not go further and assume that he can do the entire engineering of a complex construction just as the experienced engineer would do it. If he assume such a responsibility he does so unwisely, for he is taking upon himself something to which he cannot possibly do justice. Engineering is a separate profession, requiring of its members a lifetime of study and devotion, out of which alone can issue the experience which is required by the complex developments of recent building construction. Moreover, the architect cannot, in order to serve his clients' best interests, assume the dual position of architect and engineer. He should have, for his purpose, a sound understanding of the fundamental principles of the science of construction so that it may in his hands become part of his art and enable him to recognize at a glance the desirable solutions of a given problem. Such a familiarity with engineering puts the architect and the engineer into the proper professional relations when it becomes necessary for them to co-operate on a piece of architecture, admitting that each has legitimate work to do. It enables the architect to design intelligently and structurally and therefore economically; it simplifies considerably the work of the engineer, and if he happen at the same time to be a contractor, it serves as a check on his work, thus saving time and money for the client.

It should be stated here that the position of consulting engineer is not a subservient one, neither is it one of entire independence. In designing a building the architect has legitimate work to do; so has the engineer, if there is need for one, and the better each understands the

function of the other, the more effective will be their co-operation and the better the building. To accomplish such an understanding it is of course essential that the engineer should sympathize with the architect's point of view, namely, to produce an artistic as well as an economical building. It is necessary for him to bear constantly in mind that he is helping the architect to produce a piece of architecture. To do his best for economy is not sufficient; he must accept the architect's co-operation and advice to achieve a result which shall be pleasing to look at as well. The architect is primarily an artist in his buildings and to assist him in producing the best effect should be the engineer's idea first and last.

As the architect exerts his influence chiefly for what is artistic he, too, should not forget his true function when he is expressing himself in terms of engineering. For him the two elements that are so often called irreconcilable and inconsistent should be inseparably connected. If he would conceive his design in this spirit we should not so often encounter, in buildings that have considerable merit, that which cannot be easily and economically constructed or what had better not been built. Good architecture requires such a co-ordinate consideration of good taste and engineering as are dictated by a highly developed aesthetic sense which the architect alone has the opportunity to cultivate. It should be as impossible for him to conceive his architectural forms as distinct from the engineering principles involved in the problem as it is for him to think of plans, elevations and sections as distinct conceptions. The skyscraper problem still offers him ample opportunity to represent the two elements in their just relation to each other. Perhaps the solution of this perplexing type of building has its secret in this proper relation between engineering and architecture, which remains an undetermined quantity awaiting the meeting of the two professions on common ground.

The architect's lack of appreciation of a good foundation in the fundamental principles of structural engineering and his failure to properly equip himself in this respect may be set down chiefly to two causes, the inefficiency of the present system of architects' handbooks on the one hand and the apparently unsuitable training in the subject that the architectural schools offer.

Many reference books have been issued by the steel companies for the use of the architect to save him time in making his engineering computations. These books are admirable in their way, no doubt, but how many architects are there that use them as they were intended to be used, with an understanding of the terms employed and of the basis of the calculations on which the tabulated results are founded? We venture to say the number is small and the majority who refer to these books use them without understanding the most elementary principles of engineering. Shearing forces, bending moments, moments of inertia, radii of gyration and moduli of rupture mean very little to the man who consults the handbook without understanding its basis. A purpose no doubt is served by these handbooks, but whether this is really a useful purpose is questionable. The simpler problems of engineering that come up in daily practice it is absolutely necessary for the architect and the efficient draughtsman to be able to solve readily. Many of these problems are not to be found in the handbooks in such a form that he can readily recognize them unless he possesses some working knowledge of the subject, and he is generally puzzled when such a problem comes up. The result is that in order to be sure of not making a mistake he will call for an excessive amount of material and thereby waste the client's money. Or, if he be very conscientious and persistent, he will waste his time in trying to find the correct solution of a problem which he knows he should have at his fingers' ends.

The amount of engineering that an architect needs to know in order to meet successfully his daily needs, is, on consideration, found to be very little, but this little he must know perfectly. But it is not possible for the

average draughtsman to obtain even this small amount of engineering knowledge from the architectural engineering reference books as they are at present constituted. He is therefore left in the lurch and must make the best of the poor opportunities for improvement that confront him. He must content himself with accepting on faith whatever his common sense will not tell him. The hand book is for him a sacred book whose value he implicitly relies on, but whose basis is sealed to him. He is told that if he will turn to a certain page and column he will find there the answer which he is seeking, and a great many men really acquire an extraordinary facility in thus using these books. But whatever insight into the why and the wherefore they may have gained has come from this constant practice of looking up certain particular examples. This method of enlightenment on the subject must necessarily be not only incomplete but inefficient as well. A more profitable way of acquiring the essentials would be by adopting some rational and progressive plan of procedure, and according to this bringing out by practical examples the governing principles which must be mastered in order to be able to solve successfully any example of a like kind that could ever arise. To follow such a program even for the simpler problems would, no doubt, require some acquaintance with the elementary mathematics and enough physics to explain the constitution of bodies as considered in the statics of building construction. It would be unnecessary to include as preliminaries for the practical man of the office, such subjects as chemistry and geology, processes of manufacture and strength of materials; it may be safely assumed that the training he has got in these subjects as the result of his practical experience is sufficient for his purpose. At any rate, he cannot afford to spend more time on these subjects at the expense of such knowledge as he cannot obtain in the office. What he needs most of all is an enlightened point of view of the general field of structural engineering as it is applied to architectural practice. Such a mental development as this plan contemplates would enable him to use the architectural engineering handbooks intelligently and profitably to his employer or his client.

From a critical examination of the architects' handbooks of engineering it will not be difficult to see why a proper grounding in structural engineering should be so lamentably scarce among architectural draughtsmen and many architects. We should, however, expect something better in this respect of the man who has had the advantage of training in an architectural school, but here again the almost utter lack of a modicum of engineering knowledge is surprising and naturally leads one to look for the reason. Do the courses in architectural engineering in the schools of architecture as they are at present constituted, give the coming generation of architects what they will require to meet the demands of their practice? The results in practice up to date would seem to indicate a flaw somewhere in the fabric. It may be that these courses are at present conducted too much from the engineer's point of view and not enough from the architect's, or it may be that the students lack the preparatory training without which they can hope to benefit very little by these courses. However hard it may be to say just where the trouble is, it is none the less a real difficulty which would bear investigation.

H. W. Frohne.

NOTES & COMMENTS

THE NEW CHEMICAL NATIONAL BANK, NEW YORK

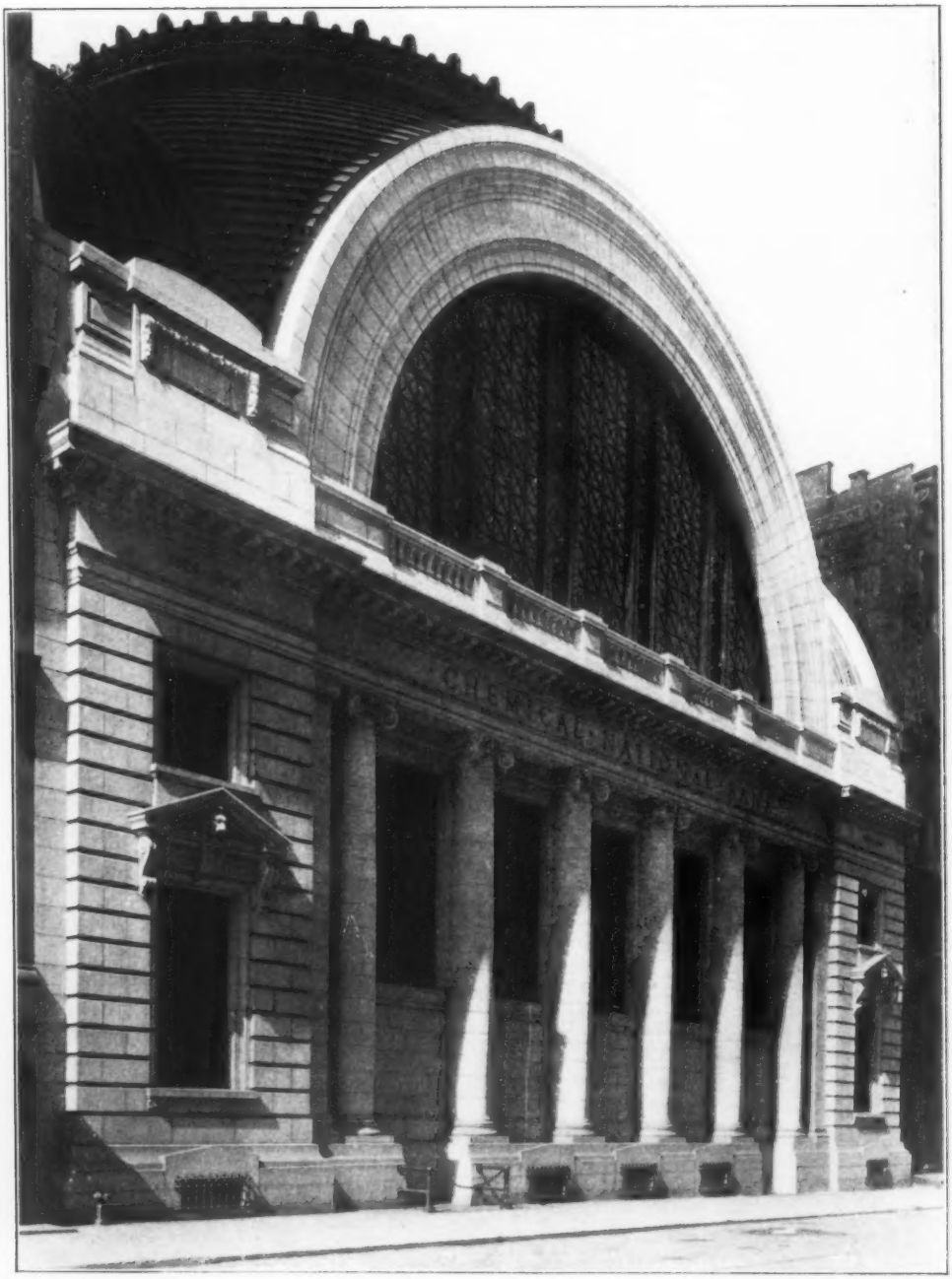
Walking up Broadway opposite the north end of City Hall Park the spectator's attention is arrested just before he reaches Chambers Street by what must seem to him a strange fragment of classic architecture. It is in fact No. 270 Broadway, and as the inscription in its frieze proclaims, the Chemical National Bank. It is the entrance to the bank, but where, he asks, is the bank itself, or is it one of those banking institutions which have recently erected buildings that are as a rule more conspicuous by their locations and characteristic architectural treatment than by their great size? If he will walk to the corner of Chambers Street and look west he will find the answer to his question; the street front of this bank is some distance west on Chambers Street, giving the banking room a fine north light through the large dome which is to be seen in the illustration. The bank therefore possesses the advantage of being on Broadway without taking up the excessive frontage which would be demanded by its large banking room. The plan, moreover, gains by the disposition of the lot an advantage which it could not enjoy if it were placed on a rectangular plot of equal area on the corner occupied by its tall neighbor, the National Shoe and Leather Bank. The shape of the lot on which the Chemical National Bank stands practically determined its plan, which would seem especially well suited to the purposes of a banking institution. Entering at 270 Broadway through the monumental entrance referred to above one passes through a spacious vestibule into a vaulted public corridor which is not only artistically effective by its dimensions but serves particularly well its function as the artery of business circulation, which is very important in a building devoted to this use.

The banking room is a spacious and lofty square room covered by a steel dome on pendentives with window arches on the north and south sides of the square and barrel vaults on the other two sides. While the main effect of this room is pleasing architecturally, there is a feeling of weakness at the corners where the mouldings of the large pendentives mitre and come down on the denticulated Doric cornice which has been carried all around the room. The great crushing weight of the dome does not here at the corners appear aesthetically to have been properly taken care of.

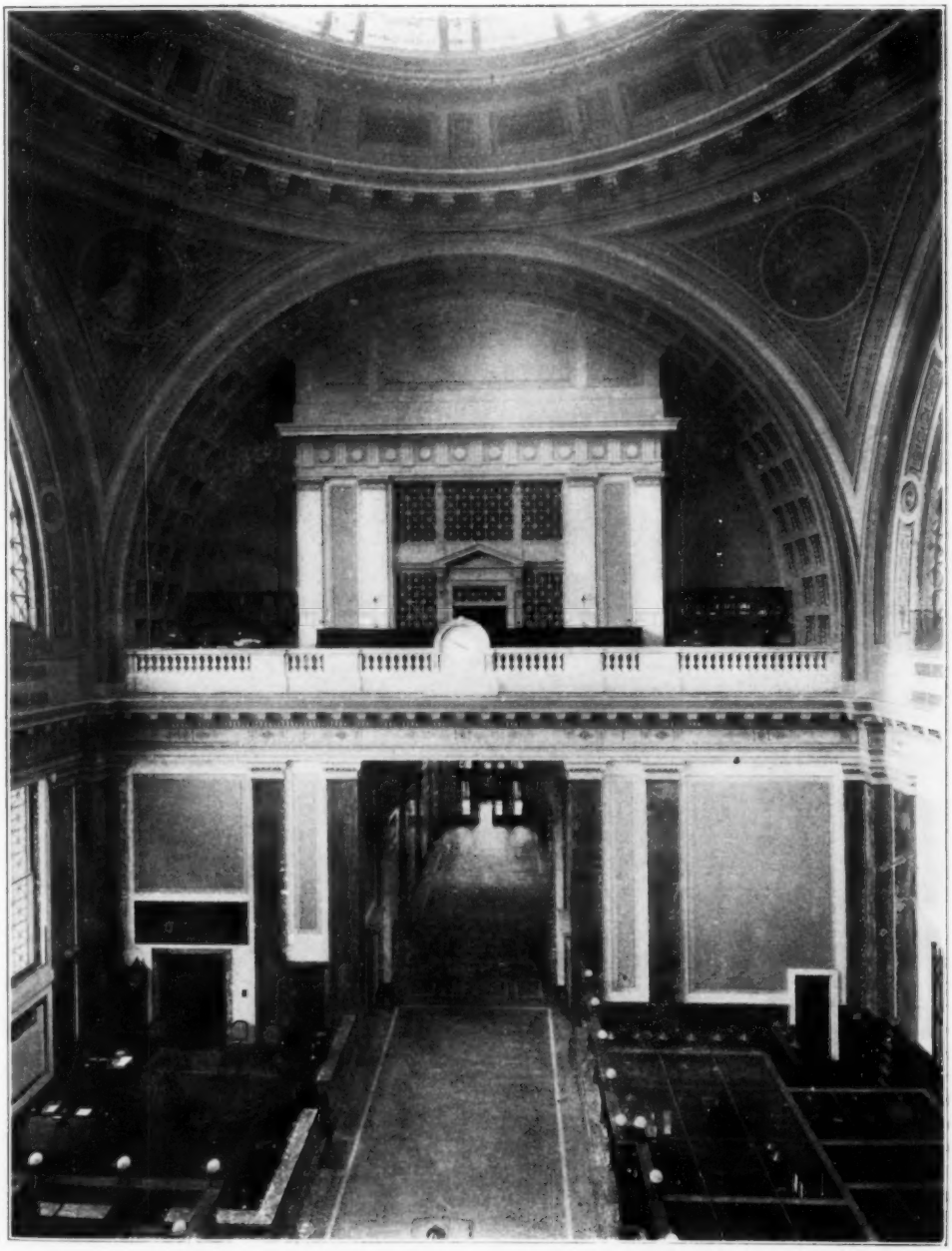
The treatment of this dome on the exterior is more satisfactorily managed, exposing to view both the barrel vaults and the pendentives. But here again the treatment of the great arch on Chambers Street seems unduly heavy and, it may even be said, a bit out of scale with the rest of the architecture of that façade. It is conceivable that, even though it may have been necessary for certain reasons to have this band of stone as wide as it has been made, it could have been given some form that would have effectually disguised its proportions. Its treatment as a single band with a huge fillet on the outside does not accomplish what one would have thought the designer's natural object, namely, to reduce its scale. This band is, however, but one feature of a composition which is in other respects restful and dignified. It is a frank expression on the exterior of what happens on the interior, and in this it is distinctly to be commended. It is rather in certain minor matters that one cannot altogether agree with the architects' choice. The colonnade is imposing in itself but fails for some unaccountable reason to show at its best; something appears to be missing in its setting, the curtain wall is bare, and the bases of the columns are not satisfactorily tied together, the base block being unceremoniously interrupted, in the one case, for a sidewalk lift and in the other for an area grating. One may not, of course, question the presence of such utilitarian features, but one may expect to see them treated in such a way that they do not seriously affect the larger matters of architectural composition.

SPRINGFIELD'S CITY HALL

It is a rather unusual month in which something is not done in Springfield, Mass., that has civic art interest. This has been especially true of late, when the city has been working on three great schemes: the adoption of an improved building ordi-



THE NEW CHEMICAL NATIONAL BANK—CHAMBERS STREET FRONT.
Chambers Street, near Broadway, New York. Trowbridge & Livingston, Architects.
Photo by Floyd E. Baker.



THE NEW CHEMICAL NATIONAL BANK—THE BANKING ROOM.
LOOKING TOWARD THE ENTRANCE.

Trowbridge & Livingston, Architects.
Photo by Floyd E. Baker.

THE NEW CHEMICAL NATIONAL BANK—THE ENTRANCE CORRIDOR.
270 Broadway, New York. Trowbridge & Livingston, Architects.

nance, the reclamation of two miles of river front for park purposes, and the establishment of a civic center. A long step toward accomplishing the latter was taken the end of April, when the City Council took final action in determination of the site for the new city hall, ordering a taking up of the options that had been secured on property between Court and Pynchon Streets, diagonally across from Court Square. The final action was secured two years after the plan was first formally proposed by ex-Mayor Dickinson; but it was worth waiting for. Even in Springfield the gods' mills grind slowly. Thus workers in other places make take heart of grace if their Rome is not built in a day.

A NEGLECTED CHANCE IN NEW ZEALAND

An article in The Arena for April discussed at some length the housing operations that have been undertaken in New Zealand. The point of view was the sociological, not to say the socialistic, as was entirely proper since the movement has had a remarkable development there. But the matter of interest to architects is that there were illustrations of the houses erected by the government and rented to workingmen. There was a chance, in this wholesale government construction, to secure an artistic ensemble, and to show what good results could be obtained for a little money. But it

was miserably thrown away. The houses are as thoroughly bad, in their exterior elevations, as any that private enterprise constructs at similar cost in this country. That, unfortunately, is saying much, since under such circumstances the contractor is often the designer. The meaning is that the United States is not quite at the bottom of the scale artistically, since we would probably have insisted upon better government work. There is at least that comfort in the pitiful showing.

EXCHANGE PLACE, PROVIDENCE

The improvement of Exchange Place in Providence is again before the public, as it has been more or less for many years. Lately the Rhode Island Chapter of the A. I. A. has ordered a competition among its members for plans that shall best unite beauty, dignity and utility. Providence possesses a very unique possibility in this open space, in the heart of the city—with the Union Station's approach opening into it, and the city hall, new federal building, and new fire headquarters already located on its borders. But it is essentially a space to be used, not simply decorated. City and interurban trolleys gather in it, and their use of it may well be encouraged for the convenience of the public, such is the proximity to the steam road station. Whether the city should permit, however, the transformation of some of the space into a deliberately planned open-air trolley station—as has been suggested—is a matter on which there is a good deal to be said, both *pro* and *con*. If Providence has an unique opportunity, it has also a special responsibility, which happily is realized, and a good solution of the problem is sure to be of great suggestive value to other cities.

REMODELING THE PLACE DU CARROUSEL

Exchange Place in Providence and Copley Square in Boston are not the only famous city open spaces for the remodeling of which there are interesting plans. A new scheme for the Place du Carrousel in Paris has been worked out by M. Redon, the architect to the Louvre. Improvement was much needed there, and few are the strictly ornamental spaces of equal area where it would count for more than at this central point of the artistic world. Redon proposes a fountain basin at each end of the middle space, the fountains to be decorated, like those on the terrace at Versailles, with groups of sculpture, not so high as to interfere with the perspective. M. Injalbert

THE NEW CHEMICAL NATIONAL BANK—THE BANKING ROOM FROM THE ENTRANCE CORRIDOR.

270 Broadway, New York. Trowbridge & Livingston, Architects.

Photo by Floyd E. Baker.

has been entrusted with their modeling. The surrounding space will be laid out in lawns and parterres, with electric candelabra here and there. In front of the Carrousel arch, there are to be figures symbolical of military glory and holding crowns. For these M. Fremiet makes the designs. As a central *motif* there is proposed a figure of Liberty, to be executed by M. Mercié, in harmony of spirit with the Gambetta Monument. Back of the monument, the square will be devoted to the Arts, the statues of Poussin, Watteau, Puget, Mansard, and others showing in relief against a wall of verdure, as in old time French gardens.

THE NEW CHEMICAL NATIONAL BANK—DIRECTORS' ROOM.
270 Broadway, New York. Trowbridge & Livingston, Architects.
Photo by Floyd E. Baker.

HANDLING MILLIONS

Two reports recently submitted to the Board of Estimate in New York are sufficiently striking to command a place in any current history of American municipal development. One was submitted by Chief Engineer N. P. Lewis, in response to a request from the board. It gave the cost of improvements for which the Board of Estimate will have to make appropriations before January 1, 1910. These were simply the improvements to which the board is now committed, or—as in the case of the allowance for school sites and buildings—they are only the average allowance called for in former years. As a whole, the figures are doubtless conservative. Yet they total to $200,000,000. Not one cent of this is for maintenance. It is all to make New York a better place in which to live, a finer city. One gains from it an idea of how vast is this annual development work, how immense the normal civic improvement energy of a growing city even without any special civic art enthusiasm, how truly the building of cities is steadily in progress. The figures suggest, too, how great proportionately is the satisfaction gained by the public from the small amount that is occasionally added to the grand total for purely decorative purposes. The other report, submitted by Comptroller Metz, gave the rents which are paid by the city for space in office buildings for departments that have overflowed

the municipal accommodations. These rents amount already to a million dollars a year, and they are steadily growing; while added to the cost is the inconvenience of scattering departments all over the city, as well as the impropriety of the custom. But from simply the financial standpoint, the figures made a powerful argument for a great municipal office building. Its designing must be, for architects undertaking it in the proper spirit, an unusually interesting problem.

ANOTHER CITY IMPROVEMENT REPORT

Greenville, S. C., is the latest city to join the lengthening procession of those progressive municipalities by which comprehensive plans for future improvement and beautification have been secured. In this case the Municipal League was the active agency that obtained the plans, and the experts employed to prepare them were Kelsey & Guild, landscape architects, of Boston. The Report is published in a pamphlet, attractively illustrated with plans and photographs, offering a good discussion of Greenville's possibilities. In an introduction it is noted that American cities have only lately discovered that "municipal beauty really means increased municipal wealth, a lower death rate and better living conditions," and that "city parks, outside of their direct benefits, distribute the city's desirable residence districts, and vastly increase their areas." It is also observed—wisely, indeed, but with interesting suggestion of the essentially landscape point of view—that "it must be persistently borne in mind that the dominant landscape features in and around a city constitute the basis of any worthy or successful scheme of improvement." This is italicized, and it is stated that in the observance of this law a city attains a charming individuality, "entirely impossible of attainment through artificial means of any magnitude whatsoever." The Report discusses the city plan, including inner and outer ring boulevards; the development of the streets and the public utilities upon them; the railway station and highways that enter the city; the grouping of public buildings; "municipal art"—statues, fountains and bridges; sanitary matters and the abatement of nuisances; parks, playgrounds, gardens, and cemeteries. With reference to the civic center these assertions are made: "There is an opportunity for Greenville to gain a distinction architecturally at present unequalled in the South. The commercial value alone of adopting and adhering to a worthy style or architectural motive for future public buildings will repay all reasonable effort. Southern conditions, landscapes, and traditions suggest colonial, Moorish or mission styles as appropriate and adaptable. The general design adopted should not be departed from, especially with grouped buildings, though the schools being widely separated might safely allow greater variation." There is quoted in another connection, this other interesting dictum, by George A. Parker: "I think it is safe to say that any business or building properly placed always increases the value of all other property in the street or neighborhood; and it is equally true that the building or business located out of place lessens the value of surrounding property." These are statements to which a popular publicity is well given.

TO PAY FOR IMPROVEMENTS

Though legislative action, or a constitutional amendment, that will give to the city of New York power to acquire, in connection with a public improvement, sufficient property adjoining the improvement to enable the city by its re-sale to recoup all or part of the works cost, is a matter of vital interest to the people of New York, it is not a subject on which it will be easy to arouse popular enthusiasm. Few legislative propositions contain in them greater possibilities of material benefit to the people of the whole city than does this, which the City Improvement Commission made an essential part of its Report. Yet the people are very unlikely of their own motion to rise and demand it. For that reason, action by bodies of citizens that can, and do, appreciate it, is, as the Mayor has pointed out, exceedingly important. Such action was that taken in the resolution unanimously passed at a meeting of the New York Chapter of the A. I. A., in the spring, when the guests included members from all the societies that make up the Fine Arts Federation. If such authoritative artistic support could now be supplemented by equally authoritative endorsement from business men and from lawyers, the movement would have a long start. There was given here last month a synopsis of a bill drawn for the Pennsylvania legislature, to confer this power on the City of Philadelphia. The Architectural Record is now in receipt of the following abstract of a law that is on the statute books of Ohio, the appeal for it having been made especially by the Group Plan Commission of Cleveland.

Sections 10 and 12 of the Ohio Municipal Code Law, which is a general provision for all municipal corporations in the State, are as follows:

Section 10. "All municipal corporations shall have power to appropriate, enter upon and hold real estate within their corporate limits for the following purposes:

12th. For establishing esplanades, boulevards, park ways, park grounds, and public reservations in, around and leading to public buildings for the purpose of reselling such land with reservations in the deeds of such resale as to the future use of said lands so as to protect public buildings and their environs and to preserve the view, appearance, light, air and usefulness of public grounds occupied by public buildings and esplanades and park ways leading thereto."

BOSTON PLANS

The various ambitious plans for the improvement and beautifying of Boston, recently put forward in the report of the Boston Society of Architects, by no means exhaust the subject. With the spirit for improvement abroad, and the splendid Charles River basin in process of development, many a grandiose scheme may be looked for. Such a plan, interesting for itself and for its source, has lately been brought out by Sylvester Baxter. It would place the City Hall, and other appropriate public structures, on the basin embankment, between the lines of an extended Arlington and Harvard Bridge. A short, broad, diagonal way would connect the embankment with the Public Garden, bringing all into a connected park system, while a subway under the embankment and tunneling Beacon Hill would afford quick and easy communication between the City Hall and the State House and Court House. The Boston Herald gave two pages to the project, with maps and illustrations, one of the latter, stretching across the two pages, presenting the scheme attractively in birds' eye view. In discussing the plan, which appears to involve some filling in, Mr. Baxter takes the position of those members of the Society of Architects who claim that the river is now too broad for good effect. It is magnificent, but too magnificent, since the buildings cannot be in scale with it.

There is much in the article, aside from this project, which is of interest. Discussing the Back Bay filling of years ago, Mr. Baxter asks that there be fancied the effects that might have been secured if, instead of filling in the whole area, some channels had been scooped through the flats and some islands made of the excavated material. "Might we not have had a delightful Venice, Amsterdam, or Stockholm?" He adds that when the Back Bay improvement was planned, an alternative proposition for Commonwealth Avenue actually did plot a canal throughout its length, instead of the present central planted space. Again, referring to the Charles River basin, and the long neglect of this great aesthetic asset, he says that when plans for the public parks were discussed in Boston the popular feeling was that the first thing to be taken in hand should be the basin, but that Frederick Law Olmsted "sagaciously" advised against such action, saying: "That is something you have already. You are sure of it. It cannot be taken away from you. So you had better wait with that and first do the other things which you need, but which will not wait for you." Mr. Baxter also says that when the metropolitan park system was planned, Mr. Olmsted said to him: "While we mourn lost opportunities, while we regret much precious scenery that might have been saved to posterity, yet on the whole it seems better that the work should have waited till now, when we view things so much more comprehensively and can do them so much better than formerly we could have hoped to do." The reflection is a consoling one to keep in mind, for, if much has waited until almost the present day, our progress in breadth and length of outlook has certainly been considerable within even the last few years.

THE APARTMENT HOUSE UP TO DATE

It is surprising that practical America has not yet had its eyes opened to the fact that housekeeping can be made into a regular business venture without assuming any hotel features which would make it too expensive for common people to take advantage of. It is also a surprise that no architects or builders have, so far, found any solution of the problem which necessarily must and certainly will be found, if we expect ever to be able to lead a daily life undisturbed by the everlasting servant question. Still another cause of surprise is furnished by the non-economic and impractical manner in which an ordinary dwelling house for, say, thirty families is arranged. The supply of water, heat and light has been centralized, and it would be difficult to find any person who preferred to return to the use of the well and its bucket, or kerosene lamps or

heating stoves after he had once been accustomed to push a button in order to get light, or to turn a faucet or knob in order to be supplied with water or heat.

But it seems not yet to have been realized that the most important centralization of all, that in regard to the preparation of meals, is the greatest asset of improvement which can be added to a dwelling house, as it concerns infinitely greater expense accounts than those relating to water, gas and heat supply. (I wish in this connection to register my most earnest objection to heating apparatus without ventilation. Such an arrangement marks, in my opinion, a retrogression, as it deprives people of good air without giving them a fresh supply in exchange. And since it is not lawful to stifle people, I would suggest the enactment of an ordinance prohibiting the installation of heating apparatus when there is not at the same time some provision made—it can be done at a very insignificant cost—for scientific ventilation.)

On the occasion when my building in Copenhagen was inspected by the representative of the German government, the Prince of Reuss, and his architectural expert, M. de Bruyn, imperial councillor and member of the architectural commission, the editor of the Berlin "Lokal-Anzeiger," who accompanied them, expressed his wonder that the idea of building such houses had not been exploited long before, since it seemed so perfectly natural and reasonable that it was hard to imagine how it should ever have been otherwise.

It would not do to try to arrange the daily life of ordinary people on the hotel plan. At the bottom of the heart of every American is the desire to have a home of his own, a place which he can call his, where he may receive his friends, and where his wife's supervision can make everything comfortable according to her own ideals. Aside from this, hotel life (even in so-called apartment houses or hotels) is much too costly, and it can in no instance be considered a satisfactory substitute for the real home which every person longs for, needs and deserves to enjoy. An ideal mode of living would, of course, be achieved by having one's own house with a retinue of capable servants, but the chances of carrying out this plan are becoming less all the time, while if the house should be situated in the suburbs of a large city, there instantly arises the difficulty of obtaining servants (it being far from easy to procure them in other places), and the standard of living is quite too expensive for the middle class of society.

When planning, mentally, the erection of a house for people of this class, one must in the first place arrange for the application of all technical improvements which have been devised up to date. There should be facilities for cleaning, by the vacuum method in the flat itself, conducted through tubes from the power plant of the property. The cleaning of windows should be looked after by the proprietor (syndicate, company or the like), and shoe-polishing can be done by machine so handily that there should be no need of having it attended to outside the building, and the tenants would naturally have nothing whatever to do with the scrubbing of stairs. In regard to domestic help, people living in a house planned in this manner can follow their own desires. In flats corresponding to the ordinary ones where two servants are employed, there will be one room set apart for servants' use, because it is likely that a family of this class will be loath to dispense with the services of private domestic attendants. In houses appointed especially for families with small children it would be proper to adapt a room on the ground floor as some sort of a kindergarten where the little ones might be left when their parents—such as have no servant or nurse maid—are out.

For smaller families there will be no provision made for a servants' chamber, thus already making a saving of one room. Furthermore, the kitchen is omitted in each flat, since the food is delivered from the central kitchen of the building by means of electric dumb-waiters, which require only a minute to bring meals up to the flats on the top floor. How impractical, at the present time, is the preparation of the daily meals in a house with, for instance, thirty families! Thirty cooks, with thirty gas ranges and almost numberless utensils are preparing a multitude of different dishes (if they know how to cook at all), and afterwards comes the thirty attacks of dish-washing, and then again still more cooking for the next meal and still further dish-washing, in a tedious, never-ending routine. This compartment, the kitchen, with its cooking and incidental gas smell and other fumes, really has no place in a home where people hope to live in peace and comfort, while every one must admit that it is unsanitary to have cooking taking place in a flat, or in any place in immediate proximity to sleeping rooms. The cooking itself always furnishes a source of wrangles between mistress and servant, and a continuous changing of servants is one of the unavoidable results. Even in the relations between husband and wife the cooking is oftentimes a disturbing factor,

and the situation is constantly becoming more serious as the years pass, because skill in cookery is becoming gradually more rare and persons willing to accept servants' positions with families are becoming alarmingly fewer each year. For these reasons the adopting of another mode of living is, in fact, nothing but a necessity, pure and simple.

Is it really profitable nowadays to build ordinary dwelling houses? I do not think so, and I am therefore going to explain the economic aspect of a house according to my plan.

First of all, it is desirable to have the present hostile relations between landlord and tenant changed, if not into friendship at least to such an extent that they will be brought closer together by their common interests. This is easiest to accomplish by having the tenant take over a part of the mortgage on the property, on which part he receives interest, besides getting a certain bonus out of the profit on the enterprise. The tenants (mortgage holders) are together represented by an attorney, who acts as an intermediary between them and the proprietor. The mortgage share is held by a tenant only as long as he occupies a flat in the house; when he vacates the latter, the new occupant takes over the mortgage share at its par value. With such a system it can be expected that the tenants will not, as is the case at present, consider their apartments simply as temporary dwelling places, which is the cause of the frequent removals and the constant repairing incident thereto.

In order to get a clear view of the financial side of an enterprise conducted according to my plan it is only necessary for any one to take paper and pencil and calculate for himself, as it can hardly be expected of me that I should be thoroughly familiar with American conditions after but a fortnight's stay in this country.

Let us suppose that the income from an ordinary house accommodating thirty families, with two servants each, is, for instance.....$———

Otto Fick's house is built exactly along the same lines and consequently yields the same income..... ———

There is saved in Otto Fick's house wages of thirty cooks at..... ———

Deduct from the running expenses of the central kitchen..... ———

Surplus ..... ———

On the purchase of food for thirty families there can be estimated a saving of 10 to 15 per cent. on the retail price ..... ———

Therefore Otto Fick's house yields an income of..... ———

While an ordinary house on the other hand yields only..... ———

This calculation has probably shown that my plan gives an income three times as large as that from an ordinary house and yet the saving derived from the omission of private kitchens, with their costly appurtenances, is not included herein.

The general risk of an enterprise of this sort is considerably lessened under my plan owing to the fact that the tenants hold the mortgage on the house, which is not to be built until such mortgage is subscribed for in full. Besides, since the building is erected on the same plan as an ordinary one, it might, in case of necessity, be rented out as an apartment hotel, or as a common flat house, in the latter case by making one room of each flat into a kitchen.

And let us now, in conclusion, contemplate how the tenants live in a house of my design. They feel like partners in the enterprise, and yet they have nothing to do with the rest of the occupants. They get their meals sent up to their own dining-rooms, at any hour that suits their convenience, and their food is not of the restaurant variety, but of the wholesome home-cooked kind. They might if they chose furnish the manager with a list of such dishes as are not wanted in their bill of fare. When temporarily absent from the house they might have an adequate reduction on the price of the meals not taken there. They might receive company and have their friends entertained in proper style, if only sufficient notice thereof were given beforehand to the management, or they might invite an occasional visitor to partake of a meal without the host or hostess fearing that the supply will give out. They might keep a servant regularly, or hire one for special occasions, their option in this respect being absolutely unhampered, and the cost of living in this manner becomes no greater than it is under prevailing conditions. In addition to this, the proprietor would receive on his part a greater revenue from his property than he does at present.

This is no Utopia, for I have managed such a house myself during a period of two years in a little country with a population of barely two million inhabitants. Afterwards, traveling in Germany and England, my scheme has been received with enthusiasm, but to the numerous requests for the establishment of such houses which I have had addressed to me from the last named countries, I have given the invariable answer

that I have only one great ambition, which is to organize a syndicate that shall be ready to build houses of this kind in any part of the world whenever a sufficient number of prospective tenants apply for shares in the mortgage.

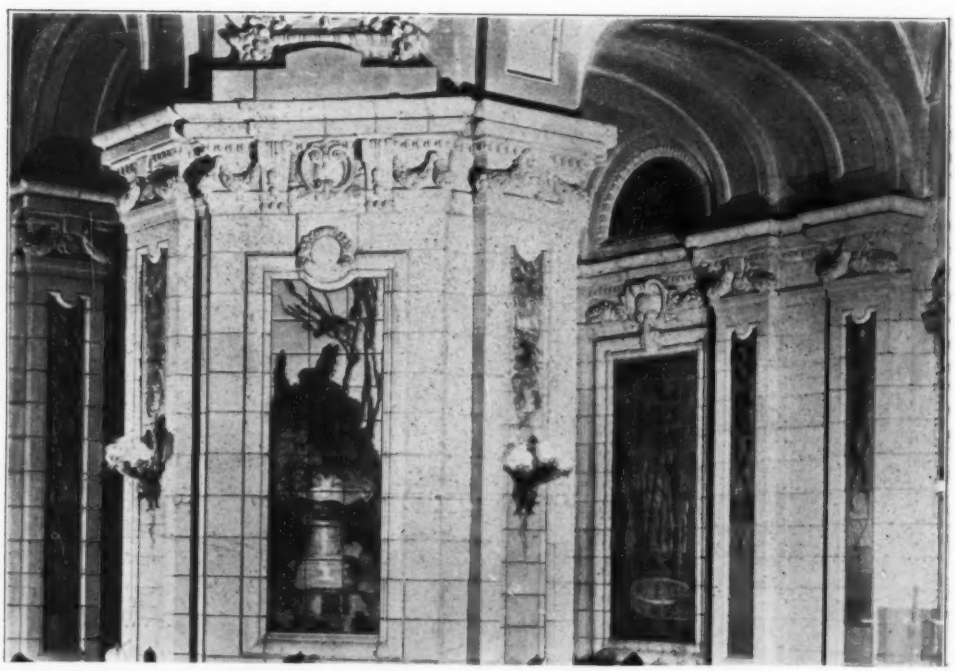
Since I have been successful enough to become the inventor of a new mode of living which simultaneously has all the features of a profitable business venture, I will not be content with having one house built here and another there, but wish to have my idea carried into effect on the broadest basis possible. O. F.

The foregoing plan by Professor Fick, of Copenhagen, for a more comfortable way of living in apartment houses, seems to us to offer, without our pretending to consider its domestic economic aspect, suggestions of signal value to American apartment house architecture. We refer particularly to the financial feature of Professor Fick's scheme in which each tenant subscribes to a share of the mortgage. The apportionment of the mortgage shares should, in order to accomplish the desired end, be such as to leave the control of the house in the hands of the tenants, who should band themselves together to direct its planning and designing, choosing their own architect who would give them what they want. The responsibility for the result, as far as the architectural and practical merits of the design are concerned, would then rest with the tenants; if the result is not everything that it should be, they alone would be to blame. Although the merit or demerit of the apartment house would depend largely upon the taste and kind of the tenants which would determine the kind of architect employed, there could hardly fail to result a decided improvement on the type of our average American apartment houses. The problem of their design and planning would be likely to be attacked from a more rational point of view considering first the health and comfort of the tenants and afterward the gain of the speculator instead of vice versa, as is done under the present unsatisfactory system of financing.

There seems no apparent reason why Professor Fick's apartment house should not be feasible in our larger cities. Any solution of the problem that would tend to place the financial control where it belongs would without question find favor especially in New York where the apartment house problem has assumed its greatest proportions. Moreover, Professor Fick assures us that it is a gilt-edged investment yielding a considerably higher rate of interest than is made under the present system. We can see no cause for its not being a good investment and, in fact, one which the speculator could ill afford to disregard. From it he would receive an increased return on his money over the present system, in consideration of which he would be giving up the control of the enterprise for his own purposes. Even without the kitchen feature which Professor Fick advocates, an apartment house built in New York under the tenants' cooperative plan of financing would be a first-class investment which is very well worth while to consider seriously. Several well-known artists in New York City have demonstrated the feasibility of cooperative building, having some years ago erected a studio building on this principle, and with such signal success that similar projects may be looked for in the immediate future. If cooperative building is desirable for the artist folk we can see no reason why it should not find, with equal success, a wider and more liberal application in cases where the demand for better dwelling houses is urgent.

On page 894 of Sweet's Indexed Catalogue of Building Construction for 1907, there appears a list of buildings in which Standard Plunger Elevators have been installed, together with their respective architects. In this list the Marbridge Building, New York City, has been erroneously attributed to Robt. D. Kohn; the architects are Townsend, Steinle & Haskell.

4.—PLACING A KILN.



5.—INTERIOR PANEL DECORATIONS. MATT-GLAZE TILE.

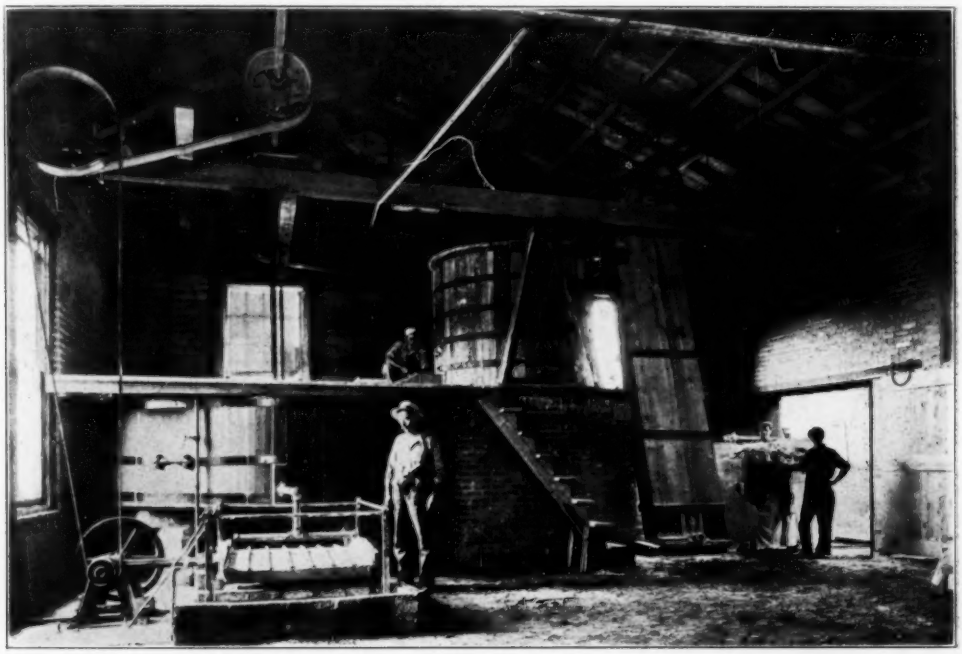
Tiles, Decorative and Structural

I.

Historical Introduction

The use of clay as a building material is very ancient. In all parts of the world, as soon as man emerged from the caves and began to construct dwellings of reeds and grass, he smeared the walls with clay to render them impervious. From this to the solid mud wall was not a long step, and in a climate almost tropical structures thus built proved almost everlasting. Such work has no necessary connection with the making of pottery, for the aborigines who roamed the plains and dwelt in tents used clay for vessels and even decorated them in a crude and simple manner. Among the mound dwellers and the builders of houses, however, a greater skill was displayed. As the people began to build there was the establishment of a more settled habit and greater care could be bestowed upon the work.

Permanence of dwelling further had the natural result of an improvement in the house itself. When the first house was built it consisted, probably, of sloping walls meeting at the top to form a roof. The door was the only opening and the interior was, naturally, dark and ill-ventilated. As more space was needed the obvious plan was to enlarge the area and, as the walls would not now meet without undue height, they were made vertical and a separate roof was evolved. At first built of branches and mud, this improved step by step until rafters and tile afforded possibilities of ornamentation out of which the most beautiful effects have been developed in all parts of the world.



1.—SLIP-HOUSE, WITH PLUNGERS AND SCREENS.

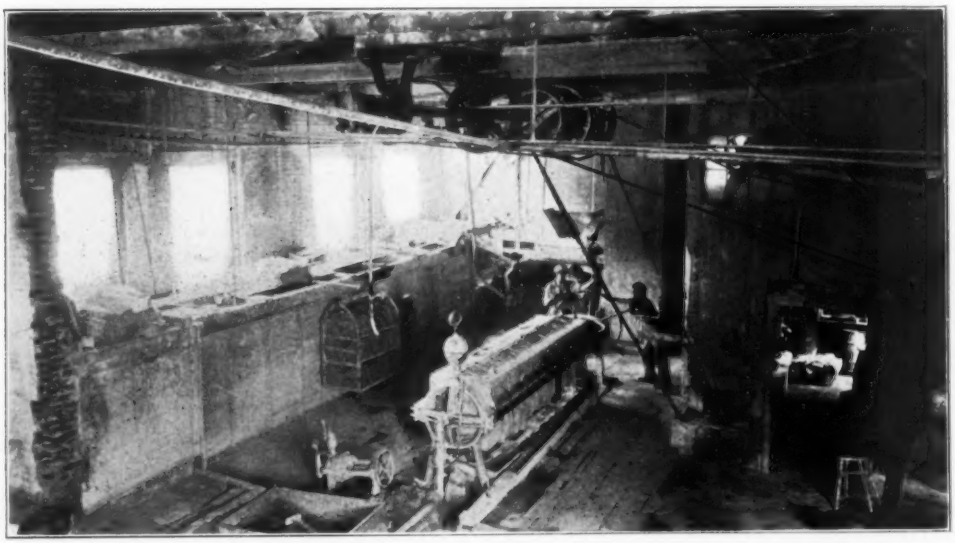
The exterior walls remained plain, but with the opening of windows and the admission of light the interior had to be

properly finished. First a plain plastering of clay, then a rude sgraffiato decoration, to be followed by the use of color and, finally, a combination of the two.

In the Eastern lands ruled by the Mohammedan power, the decoration of interiors has been studied for centuries. Not in the homes of the people, for the traveler is familiar with the low, dome-roofed huts of Teheran, but in the mosques and palaces, where every effort has been made to beautify. Marble and other costly stones have been used, the most perfect illustration being the Taj Mahal near Delhi, in India, but, after all, are the compensations of life, had not been invented.

Tile for interior work thus grew in popularity and the art spread until, when the Arabs and Moors conquered portions of the Iberian peninsula in the eighth and the twelfth centuries, respectively, the knowledge of enameled pottery and of decorative wall tile entered Europe.

The progress northward was slow. Wars and rumors of wars distracted the nations. The crusades, while they stimulated trade and brought home much knowledge of the Orient, were mainly



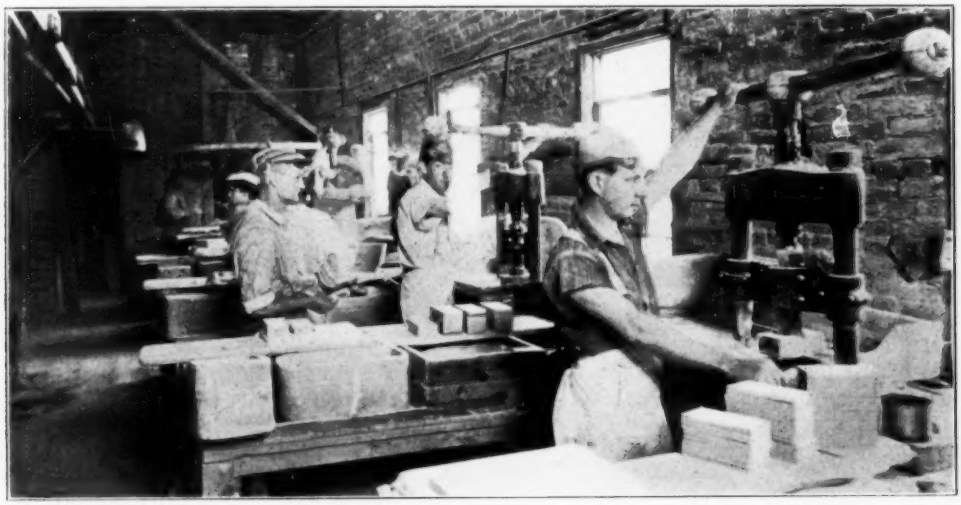
2.—SLIP TANKS AND FILTER-PRESS.

there has been found no more satisfactory finish for interior walls than glazed tile.

Why the evolution of interior finish should have resulted in the development of wall tile is not difficult to see. The climate was hot, interiors were dark, furnishings were few; the tile offered a surface which was cool, which reflected what little light there was, which was easily cleaned and which supplied a subject of continual interest. These advantages could not be found in any other material. Stucco was easily damaged and could not be cleaned; hangings were hot, dark and dusty, and wall-paper, such instrumental in promoting the arts of war. Damascus steel was estimated more highly than Damascus tile, and interest centered in the camp rather than the court. When France and Italy entered upon the age of art, luxurious hangings and costly paintings adorned the interiors and marble supplanted clay in the enrichment of structure. Furthermore, the comparative rigor of a Northern climate demanded warmth of texture in wall coverings, and the use of window glass admitted abundant light and rendered a reflecting surface unnecessary.

The ancient tile disappeared in the

growth of middle-class vulgarity in Europe, and it has been reserved for the home builders of the twentieth century to assign to the ceramic artist the task of covering their walls with a product which meets every modern condition. For a time the pure and hygienic surface of the glazed tile was deemed only appropriate for bath rooms and kitchens. Then, as the possibilities of color and texture were revealed and the perfectly incombustible nature of burned clay asserted itself, fireplaces were fitted with tile and finally, as it was realized that what was beautiful in a mantel was also beautiful in a vestibule, position after position was captured until there is no place in the dwelling where the simple and interesting surface of glazed pottery is out of harmony.



3.—MAKING DRY-PRESS TILE.

II.

The Manufacture of Tile

In the shaping of clay wares there are three possible conditions in which the material may be used. These are: liquid or slip, plastic or clay, dry or dust. For tile making the liquid material or slip is rarely or never used except as a decoration or after-treatment. Nevertheless, clay in preparation is always reduced to the liquid state first. The reason is that only thus can a clay mixture be purified. Clay in mining and transportation gathers quite an amount of foreign matter; sticks, leaves, stones, sand, coal-dust and particles of metal are among the common impurities, and in order to remove these perfectly and rapidly, the clay is reduced to a thin cream by rapid agitation with water and is strained or screened through a silk fabric of 120 meshes to the linear inch. This effectually removes all extraneous substances and the purified slip is ready for the next operation.

In the olden time the water was removed from the clay by evaporation, but now this is done by the filter-press. The press consists of a series of chambers, each lined with canvas and entered by a pipe. The slip after screening is forced either by pumps or compressed air into these chambers. The water escapes through the canvas walls and the clay, now stiffened to a plastic mass, remains within. For certain operations the clay, after some kneading, is ready for use. It is in the familiar form of a plastic substance, such as is used by sculptors and modelers. It is well adapted for the potter's wheel, for making cups, plates and saucers and for plastic tile. This

method of manufacture will, however, be dealt with later. At present it will be best to follow the clay through its various stages and conditions. The bulk of modern tile are pressed from damp dust and the clay for this process is taken from the filter press, placed on cars and run into a dryer. Here the remainder of the water is expelled and the cakes of hard clay are sent to the crusher. This machine may follow one of several types. There are the jaw crusher, the roll crusher and the eccentric crusher. The material is not hard, but speed is necessary. The first operation simply breaks up the cakes into pieces the size of a hickory nut and this having been accomplished, the heap of broken clay is moistened with a jet of water, turned over and left to mature. The moisture presently permeates the whole mass and the clay is returned to the crusher, which now reduces it to a fine powder which is screened through a sieve of about 20 mesh. Sometimes this process is varied by crushing fine at one operation and subsequently steaming the clay. The chief objection to this plan is the excessive amount of dust, which is not only injurious to the workmen, but causes considerable loss of clay. The powdered clay, containing about 12 per cent. of water, is stored in damp-proof receptacles until it is needed at the press. For the production of encaustic tile the color is provided for in the original mix, and every tint is kept by itself. For tile of which the body mass is white a white clay is, of course, used. Red clay may form the base of red or brown tile, and light colors, such as blue or green, are produced by adding metallic oxides to the white clay. In all this great care is taken to regulate the shrinkage which the clay undergoes in the fire so that all the tile, of whatever color, may be uniform in size.

The tile press is quite simple in construction. It consists essentially of a steel box and a screw plunger. The box has a loose bottom and the plunger is fitted exactly into the top. Now, when the box is filled with the moist clay and struck off level, the plunger is brought down by the workman who operates it by means of a heavy flywheel. The dust is compressed between the plunger and the bottom piece and, being reduced to about half its bulk, is solidified into a tile. The plunger is then raised, the bottom pushed up by a foot-lever and the tile removed to be dried and burned. The nature of the surface of this tile is, of course, dependent upon the plunger and the movable bottom. If an embossment be desired, one or other of these, according to circumstances, is shaped to the required design and the clay follows the shape. Thus moldings and other ornamental patterns are produced or a tile with a decoration in relief is pressed.

The tile as they leave the press are set in saggers, such as are used for pottery, except that tile saggers are made square for the economy of space. Perhaps it should be explained that saggers are boxes made of refractory clay. They protect the tile from the direct action of the flames and, as they can be piled one upon another, enable the kiln to be filled to the best advantage. The kiln is much the same as that used for burning pottery. Coal or oil or natural gas is used as fuel, according to circumstances, and the heat is allowed to rise very gradually so that the moisture may be slowly expelled. When this has been accomplished a more rapid fire is maintained until every part of the kiln has reached the required temperature. For encaustic or unglazed tile no further treatment is necessary, but the product, being sufficiently cooled, is sent at once to the warehouse to be sorted and laid out. The dry-press process for making tile has been resorted to very largely on account of the comparative ease with which a true surface can be produced. Tile made from damp dust are nearly always straight, while it is extremely difficult to make a straight tile from plastic clay. On the other hand, the dry-press tile always exhibit a hard and unsympathetic surface, so that there is a strong demand for a plastic tile which shall enable the artist to avoid this limitation.

The manufacture of plastic tile is different in every respect. The clay body is prepared in the same way at the first, but instead of being dried out it is kept

in the moist condition and there is added to it a proportion of a material called grog. Grog is nothing but ground pottery. It may be fragments of broken tile, unglazed, or it may be crushed bricks or any other form of burned clay. Its use is to render the clay mass open and porous, to enable the moisture to escape freely, to counteract shrinkage and to keep the wares straight. Sand would not serve the same purpose because the small quartz grains of which sand is composed swell when heated and tend to burst the ware. Grog does not do this and hence it is indispensable in a plastic tile. The proper proportion of grog being added to the plastic clay, the whole mass is turned into a kneading machine, called a pug-mill, and from this the clay may be taken to be used by hand or it may be expressed as a solid mass, to be cut up by passing a tight wire. Plaster molds are provided, each the exact size of the tile, due allowance having been made for shrinkage, and either a blank is cut with the wire or the clay is slapped and pounded into the cavity. The plaster of which the mold is made speedily absorbs the moisture from the clay, and the tile is turned out onto a board to complete the drying. At this stage modeled embossments are wrought out, the same clay being used or, if a repetition be desired, the mold itself bears the embossment in reverse. Tile thus made are not so true and accurate as are those pressed from dust, but, on the other hand, they possess the indescribable quality of plasticity and exhibit an individuality which the machine-made tile always lacks.

The choice betwen the two methods of manufacture must depend largely upon the nature of the glaze to be used, for while a transparent glaze will reveal the structure of the tile and the nature of its surface, a matt glaze, being in its construction thick and opaque, will conceal both.

Of course, it must be borne in mind that a modeled surface is not possible in a dry-press tile; the only way a relief can be produced is, as already pointed out, in the die itself, while a plastic tile may be freely treated in the clay.

Transparent glazes consist, for the most part, of a silicate of lead and lime. The required mixture is ground in water to form a thin cream and in this the face of the tile is dipped. The coloring matter is introduced in the form of metallic oxides, cobalt for blue, copper for green, iron for light brown and manganese for dark brown. These can be mingled and intermingled in endless variety, so that almost every hue is attainable. The glaze flows slightly in the fire, so that varying thicknesses produce lighter and darker tones. Unfortunately it has not yet been found entirely possible to prevent the cracking of these glazes, known as "crazing" by tile makers. Glazes that will not craze are made, to be sure, but it nearly always happens that the action of the cement in laying will cause the crack, even though the tile may have remained perfect for a long time in the warehouse.

Matt or dull glazes are different in construction and manipulation and are now in great demand. The glaze probably owes its texture to an excess of alumina, but the actual role played by this ingredient is not exactly known. Several theories have been advanced by ceramists, but so far none has been proven. The matt glaze is colored in the same way as the clear, but the texture is dependent upon a very thick coating being applied to the tile. This also makes possible certain schemes of decoration which are not applicable to bright glazes. Two or more glazes may be applied to the same surface and only enough flowing will result to bring the surfaces into harmony. A modeled design becomes an integral part of the tile and a general balance of form is the result.

Matt glazes are applied either by dipping or with a brush and, as is also the case with bright glazed wares, the tile are burned when lying flat. Saggers are used in the second burn just as in the first, but the tile are now laid upon clay shelves, so that each one is kept from contact with its neighbor. The fire for the glaze may be much more rapid than for the clay, but great care is generally exercised in cooling. If a glaze be cooled

rapidly it scarcely has time to get rid of the bubbles which invariably form in a melting mass, and when the kiln is opened there are found minute blisters or pin holes where the surface ought to be smooth and clear.

III.

The Use of Tile

It is not necessary here to point out the advantage of glazed tile in bath rooms, light shafts and underground offices. Those things are of the past and are sufficiently obvious. A new day is dawning, however, in the use of ceramic decorations and in its advance there will be revealed possibilities at present unperceived.

In the first place, home building and decoration are progressing along the lines of structure. This began with the exterior as the early English half-timber treatment was revived. The tile roof also belongs to this era, the decorative effect being strictly of the structure itself. But the same idea has passed to the interior. No longer is a smoothly plastered wall used as a vehicle for wall-paper. The plaster is now rough cast and finished in its natural texture and tone. Wood is no more enameled and gilded, but is so treated as to emphasize the value and beauty of the grain. And all this is to the good. But there are limitations to the use of rough-cast work and open timber. There are occasions when grandeur and richness are demanded. Not only may a wainscot or frieze be filled with richly-toned tiles glazed in a delicate texture matt, but panels, arches and ceilings may be similarly treated. Such a surface is not only structural and artistic, but perfectly sanitary, for the whole room, may be washed without damage. Think of the advantage this would be in a smoky city, where rough-cast walls and even smooth wall-paper must become unsightly in a few weeks.

Furthermore, a tiled surface offers unlimited scope for artistic expression. Painted ceilings and decorated walls have never been absolutely satisfactory because the work is surface work and not structural. Tile, on the other hand, is ceramic throughout. Even the old Dutch blue tile had this advantage, how much more the modern modeled surface, covered with a glaze of soft texture and glowing color. The artist has carried out his design in an imperishable material and has expressed himself in tones which will neither fade nor decay.

Marble has a natural beauty and conveys the idea of costly embellishment, but marble must lack the personal note and is not, therefore, artistic. Tile possesses this personal attribute. It belongs to the class of production by which human thought is expressed and hence it lays claim to rank with works of art.

This idea is new. It is not easy to dissociate the thought of tiled walls from the bathroom and the basement. Even colored tiles are unconsciously relegated to the soda fountain and the bar room, but a new concept has arisen. The modern texture-glazed tile of tender hue is available for the whole of the home from vestibule to boudoir and the possibilities of its use are awaiting development.

Charles F. Binns.

[Illustrations 1, 2, 3, 4, by courtesy of the Beaver Falls Art Tile Co., Beaver Falls, Pa. Illustration 5 by courtesy of the Rookwood Pottery Co., Cincinnati, O.]